Ontario
Ministry of the Environment
Ministère de l'Environnement

Central Region
Région du Centre

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SECCHI DISC-CHLOROPHYLL a SELF-HELP PROGRAM

1983 Sampling Results for Lakes in the Central Region of the Ministry of the Environment

ISSN 0715-0261

1) Allen Lake, Dudley & Harcourt Twps., Haliburton
2) Balsam Lake, Bexley Twp., Victoria
3) Bass Lake, Orillia & Oro Twps., Simcoe County
4) Bass Lake, Medora Ward, Twp. of Muskoka Lakes, Muskoka
5) Bat Lake, Minden Twp., Haliburton
6) Beech Lake, Stanhope Twp., Haliburton
7) Bella Lake, Sinclair Ward, Twp. of Lake of Bays, Muskoka
8) Belmont Lake, Belmont & Methuen Twps., Peterborough
9) Big Barnham Lake, Dudley Twp., Haliburton
10) Big Glamor Lake, Glamorgan Twp., Haliburton
11) Big Hawk Lake, Stanhope Twp., Haliburton
12) Big Straggle Lake, Harcourt Twp., Haliburton
13) Birch Bark (Trounce) Lake, Galway Twp., Peterborough
14) Black Lake, Lutterworth Twp., Haliburton
15) Black Lake, Wood Ward, Twp. of Muskoka Lakes, Muskoka
16) Boshkung Lake, Stanhope Twp., Haliburton
17) Bruce Lake, Medora Ward, Twp. of Muskoka Lakes, Muskoka
18) Buckskin Lake, Monmouth Twp., Haliburton
19) Cameron Lake, Fenelon Twp., Victoria
20) Canning Lake, Minden & Snowdon Twps., Haliburton
21) Chandos Lake, Chandos Twp., Peterborough
22) Clear Lake, Oakley Ward, Town of Bracebridge, Muskoka
23) Clearwater Lake, Morrison Ward, Town of Gravenhurst, Muskoka
24) Clement Lake, Monmouth Twp., Haliburton
25) Crego Lake, Somerville Twp., Victoria
26) Crown Lake, Livingstone Twp., Haliburton
27) Crystal Lake, Galway Twp., Peterborough
28) Davis Lake, Lutterworth Twp., Haliburton
29) Doeskin (Doe) Lake, Muskoka Ward, Town of Gravenhurst, Muskoka
30) Dummer Lake, Dummer Twp., Peterborough
31) East Lake, Harcourt Twp., Haliburton
32) Farlain Lake, Tiny Twp., Simcoe County
33) Fawn (Deer) Lake, Macaulay & Stephenson Ward, Town of Bracebridge, Muskoka
34) George's Lake, Harcourt Twp., Haliburton
35) Go Home Lake, Gibson Ward, Twp. of Georgian Bay, Muskoka
36) Gull Lake, Muskoka Ward, Town of Gravenhurst, Muskoka
37) Haliburton Lake, Harburn Twp., Haliburton
38) Halls Lake, Stanhope Twp., Haliburton
39) Harp Lake, Chaffey Ward, Town of Huntsville, Muskoka
40) Head Lake, Laxton & Digby Twps., Victoria
41) Healey Lake, Macaulay Twp., Town of Bracebridge, Muskoka

SECCHI DISC-CHLOROPHYLL a SELF-HELP PROGRAM cont'd

42) Horseshoe (Elsie) Lake, Minden Twp., Haliburton
43) Jack Lake, Burleigh & Methuen Twps., Peterborough
44) Kahshe Lake, Morrison Ward, Town of Gravenhurst, Muskoka
45) Kashagawigamog Lake, Dysart & Minden Twp., Haliburton
46) Kasshabog Lake, Belmont & Methune Twps., Peterborough
47) Kawagama Lake, Haliburton
48) Kennaway Lake, Harcourt Twp., Haliburton
49) Kennisis Lake, Havelock & Guilford Twp., Haliburton
50) Koshlong Lake, Glamorgan Twp., Haliburton
51) Lake of Bays, Twp. of Lake of Bays, Muskoka
52) Lake Joseph, Twp. of Muskoka Lakes, Muskoka
53) Lake Muskoka, Twp. of Muskoka Lakes, Muskoka
54) Lake Rosseau, Twp. of Muskoka Lakes, Muskoka
55) Lake Scugog, Scugog Twp., Region of Durham
56) Lake St. John, Rama Twp., Simcoe County
57) Leech Lake, Oakley Ward, Town of Bracebridge, Muskoka
58) Little Glamor Lake, Monmouth and Glamorgan Twps., Haliburton
59) Little Hawk Lake, Stanhope Twp., Haliburton
60) Little Kennisis Lake, Havelock Twp., Haliburton
61) Little Straggle Lake, Harcourt Twp., Haliburton
62) Long Lake, Dudley Twp., Haliburton
63) Loon Lake, Dysart Twp., Haliburton
64) Looncall Lake, Twp. of Burleigh, Peterborough
65) Lower Buckhorn Lake, Harvey Twp., Peterborough
66) Mary Lake, Stephenson & Brunel Wards, Town of Huntsville, Muskoka
67) Medora Lake, Medora Ward, Twp. of Muskoka Lakes, Muskoka
68) Miner Lake, Monmouth Twp., Haliburton
69) Miskwabi Lake, Dudley Twp., Haliburton
70) Mississauga Lake, Harvey & Cavendish Twps., Peterborough
71) Moot Lake, McLean Ward, Twp. of Lake of Bays, Muskoka
72) Mountain Lake, Minden Twp., Haliburton
73) Muldrew Lake, Muskoka, Wood & Morrison Wards, Town of Gravenhurst, Muskoka
74) Nine Mile Lake, Wood Ward, Twp. of Muskoka Lakes, Muskoka
75) Oak Lake, Belmont & Methuen Twps., Peterborough
76) Percy Lake, Harburn Twp., Haliburton
77) Pine Lake, Muskoka and Wood Wards, Town of Gravenhurst, Muskoka
78) Pine Lake, Oakley Ward, Town of Bracebridge, Muskoka
79) Rebecca Lake, Sinclair Twp., Twp. of Lake of Bays, Muskoka
80) Ril Lake, Ridout Ward, Twp. of Lake of Bays, Muskoka
81) Round Lake, Belmont Twp., Peterborough
82) Salerno Lake, Snowdon & Glamorgan Twps., Haliburton
83) Shadow Lake, Somerville Twp., Victoria
84) Six Mile Lake, Baxter Ward, Twp. of Georgian Bay, Muskoka
85) Skeleton Lake, Twp. of Muskoka Lakes, Muskoka
86) Soyers Lake, Minden Twp., Haliburton
87) Sparrow Lake, Morrison Ward, Town of Gravenhurst, Muskoka
88) Sturgeon Lake, Fenelon Twp., Victoria
89) Sunny Lake, Morrison Ward, Town of Gravenhurst, Muskoka
90) Tasso Lake, Finlayson Ward, Twp. of Lake of Bays, Muskoka
91) Turtle Lake, Burleigh Twp., Peterborough
92) Turtle (Long Turtle) Lake, Muskoka Ward, Town of Gravenhurst, Muskoka
93) Twelve Mile Bay, Freemen Ward, Twp. of Georgian Bay, Muskoka
94) Twelve Mile Lake, Minden Twp., Haliburton
95) Waseosa Lake, Chaffey Ward, Town of Huntsville, Muskoka
96) Wenona (Little Dudmon) Lake, Dudley Twp., Haliburton
97) Wood Lake, Oakley Ward, Town of Bracebridge, Muskoka

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SECCHI DISC - CHLOROPHYLL a SELF-HELP PROGRAM - 1983

The "Self Help Programme" was initiated in 1971 in response to many requests from concerned cottagers for water quality surveys on many recreational lakes throughout the Province. In the Self-Help Programme, cottagers perform the sample collection on their lakes and the Ministry analyzes and interprets the water quality information.

Volunteers in the Self-Help Programme are supplied with sampling kits which include a Secchi disc, a water sampler, sample bottles and instructions. Participants are asked to take Secchi disc readings and collect water samples bi-weekly during the ice-free period of the year. The water samples are then shipped to the nearest Ministry of the Environment laboratory where they are analyzed for chlorophyll a. The true value of this program will only be realized if it is continued for a number of years in order to define long-term trends with regard to variations in the enrichment status of the lakes.

Enrichment of lakes occurs when fertilizing nutrients, such as nitrogen and phosphorus, enter the lake via rainfall, runoff from land, and shoreline development activities (i.e. subsurface disposal systems, land clearing, etc). These nutrients promote the growth of aquatic plants and algae. It is important to realize that small to moderate amounts of aquatic plants and algae are necessary to provide food for aquatic, invertebrate organisms which serve, in turn, as food for fish. Too much growth, however, may interfere with water-oriented, recreational activities.

Previous experience has indicated that there are three general categories of lake enrichment. All three categories exist in nature, however, man's activities can alter a lake's enrichment status. The transparency of the water as indicated by Secchi disc readings and the density of suspended, microscopic, aquatic plants called algae, as indicated by chlorophyll a concentrations are measurements that are used to determine the enrichment status of a lake. The following table shows how these two measurements are interpreted to determine the enrichment status of a lake.

Enrichment Status	Secchi Disc (S.D.) (meters - m)	Chlorophyll a Concentrations (Chl.a) (micrograms/litre - ug/L)
Enriched	0-3 m	4 ug/L or greater
Moderately Enriched	3-5 m	2-4 ug/L
Unenriched	5 m or greater	0-2 ug/L

Enriched Lakes

These lakes have high concentrations of nutrients and are characterized by excessive growths of algae and aquatic weeds. This may interfere with water-oriented, recreational activities. As a result of the large amount of algae suspended in the water, Secchi disc readings are generally less than 3 metres and chlorophyll a concentrations are 4 ug/L or greater.

Moderately Enriched Lakes

These lakes have moderate concentrations of nutrients and are characterized by moderate growths of algae and aquatic weeds. They are suitable for the pursuit of water-oriented, recreational activities, however, they may develop periodic problems such as algae blooms. Secchi disc readings range from 3 to 5 metres and chlorophyll a concentrations range from 2 to 4 ug/L.

Unenriched Lakes

These lakes are the most desirable from a recreational standpoint. If these lakes are deep, they may support a cold water fishery such as lake trout. These are usually clear-water lakes, with low concentrations of nutrients. Secchi disc readings are 5 metres or greater and chlorophyll a concentrations are less than 2 ug/L.

Allen Lake

Dudley & Harcourt Twp.

Country of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Allen Lake in 1983

Station Date	Main S.D.	Chl.a
May 23	6.5	0.7
May 29	7.5	0.6
June 12	6.25	0.6
July 3	5.25	1.4
July 10	5.25	1.5
July 17	5.0	1.2
Aug 1	5.5	2.0
Aug 7	6.0	1.7
Aug 15	6.5	1.5
Aug 28	6.75	1.3
Sept 5	6.50	1.0
Oct. 10	7.50	2.0
	6.2	1.2

Once again, an excellent sampling program was done on Allen Lake in 1983. The degree of water transparency was high throughout the sampling period with Secchi disc readings ranging from 5.0 to 7.5 M. Low densities of suspended algae were present with chlorophyll a concentrations ranging from 0.6 to 2.0 ug/L. Based on the seasonal averages Allen Lake is an unenriched lake with excellent water quality.

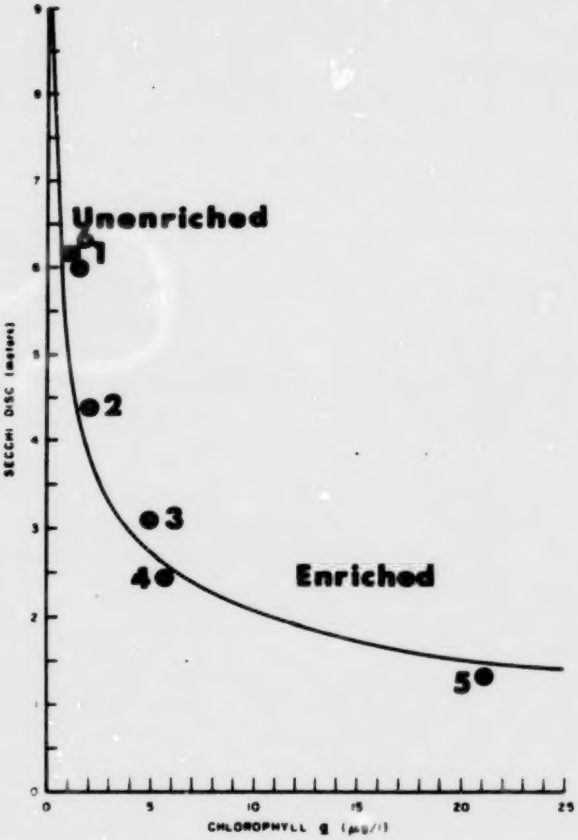
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Allen Lake from 1973 to 1983

Station	Main		Deep Basin	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973	4.7**	1.3**		
1974	4.9	1.2		
1975	5.6	1.8		
1976	5.3	1.8		
1977	5.6	- -	5.3*	
1978	5.3	1.6		
1979	5.2	1.8		
1980	5.3	2.1		
1981	5.9	1.5		
1982	6.0	1.6		
1983	6.2	1.2		

* MOE data

**Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Allen Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Allen Lake - 1983

Since 1973 the water quality of Allen Lake has not changed significantly. It has always exhibited a high degree of water transparency and low chlorophyll a concentrations. An excellent sampling program has been done on Allen Lake with 10 years of reliable seasonal information collected. We would like to congratulate you on a job very well done.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Balsam Lake

Bexley Township
Victoria County.

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Balsam Lake in 1983

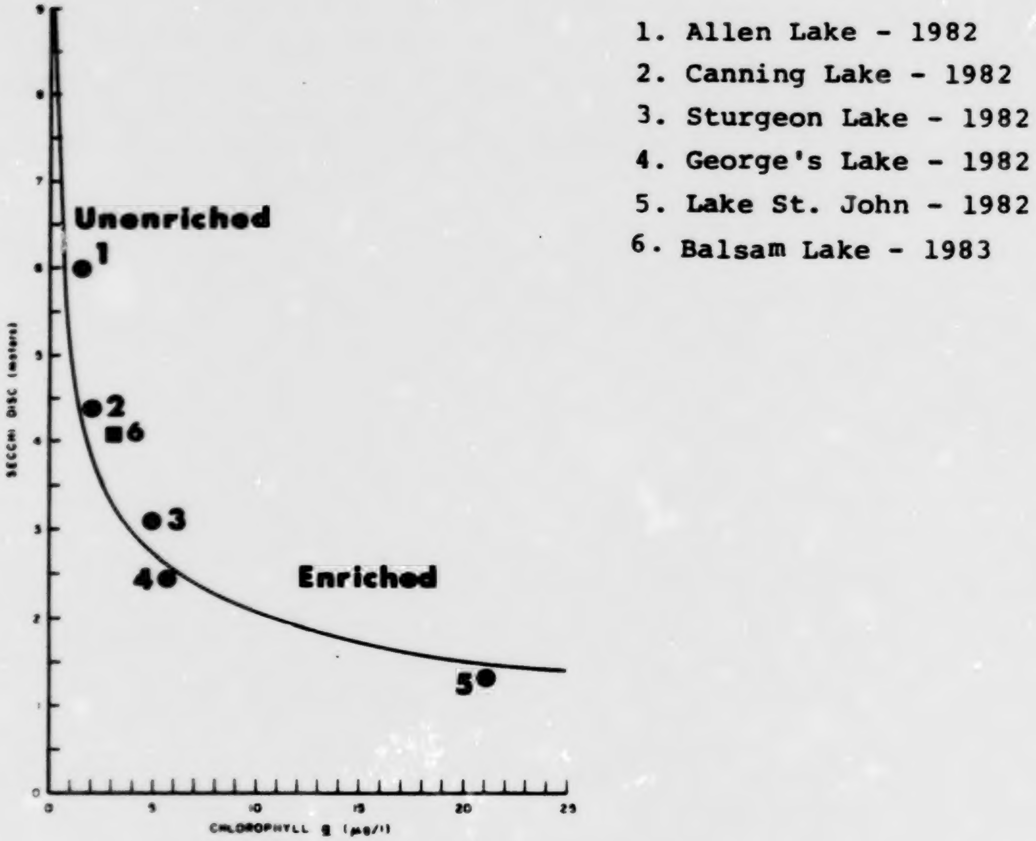
Station Date	South Bay S.D.	Chl.a
July 7	4.5	2.0
July 11	4.1	2.0
July 17	4.5	1.3
Aug. 03	3.5	2.8
Aug. 07	5.0	8.8
Aug. 15	3.0	2.6
Aug. 21	4.0	1.5
	4.1	3.2

Based on the 1983 mean values for South Bay this area of Balsam Lake was considered moderately enriched with moderate algal densities and moderately good water clarity.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Balsam Lake in 1983

Station Year	Stn. South Bay S.D.	Chl.a	Stn. North Bay S.D.	Chl.a
1971				
1972				
1973				
1974				
1975				
1976				
1977	2.9	- -		
1978	2.6	2.3		
1979	- -	- -	4.3	2.3
1980	No results			
1981	Insufficient sampling			
1982	- -	- -		
1983	4.1	3.2		

Figure 1: The relationship between Secchi disc and chlorophyll a for Balsam Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Continued participation in the sampling program is encouraged to determine long-term trends. It is recommended that an open Bay station be chosen and used on each sampling year to accurately portray trends in enrichment status.

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Bass Lake

Orillia & Oro Townships
Simcoe County

TABLE 1: **Secchi Disc (m) and chlorophyll a (ug/L) data collected from** Bass Lake in 1983

Station Date	Main S.D.	 Chl.a
June 12	2.5	0.7
July 14	3.5	2.0
July 20	2.0	2.2
July 18	2.0	1.4
Aug. 02	2.0	3.2
Aug. 15	2.5	2.2
Sept.13	2.0	4.4
	2.4	2.3

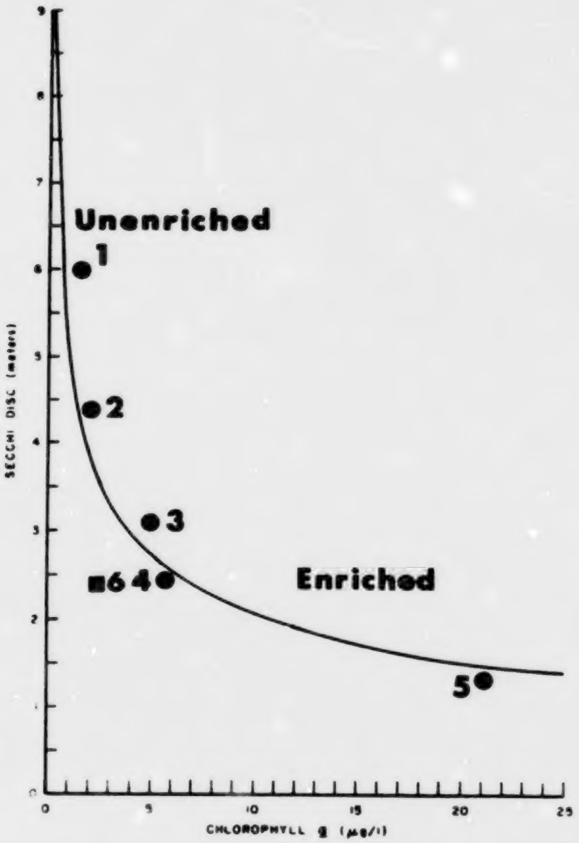
A gradual increasing trend in chlorophyll a concentration was noted in the 1983 results. However, the Secchi disc did not correspond suggesting that a deeper layer of algae was growing in the lake. Based on the mean values for the two parameters in table 1. Bass Lake was considered moderately enriched with moderately low algal densities and moderately poor water clarity.

TABLE 2: **Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from** Bass Lake from 1973 to 1983

Station Year	Main S.D.	 Chl.a
1971		
1972		
1973	2.2	2.6
1974	2.0(1.6*)	2.4(6.4*)
1975	1.9	6.5
1976	2.0	4.8
1977	2.1	- -
1978	1.8	6.7
1979	2.3	6.1
1980	3.5	4.6
1981	3.6	2.9
1982	2.7	5.2
1983	2.4	2.3

* MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Bass Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Bass Lake - 1983

Bass Lake continues to show wide variation in mean Secchi disc and chlorophyll a concentration from year to year. The sampler(s) is(are) to be congratulated on completing 11 consecutive years of sampling the lake. This is an impressive data record. Continued participation in the sampling program is encouraged.

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Bass Lake

Medora Ward
Township of Muskoka Lakes
District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Bass Lake in 1983

Station	Center Bay	
	S.D.	Chl.a
Date		
May 23	2.0	6.9
June 12	NG	2.1
June 19	3.5	2.0
June 26	4.5	1.9
July 3	3.0	1.9
Aug 14	3.0	1.6
Aug 21	2.5	1.8
Aug 28	2.5	1.1
Aug 3	3.5	1.8
Aug 29	2.5	3.7
Sept 27	2.5	5.0
	3.0	2.7

NG - reading not given

In 1983 an excellent sampling program was done on Bass Lake. The degree of water transparency was moderately low with Secchi disc readings ranging from 2.0 to 4.5 m. This was reduced somewhat due to the natural brown colouration of the water.

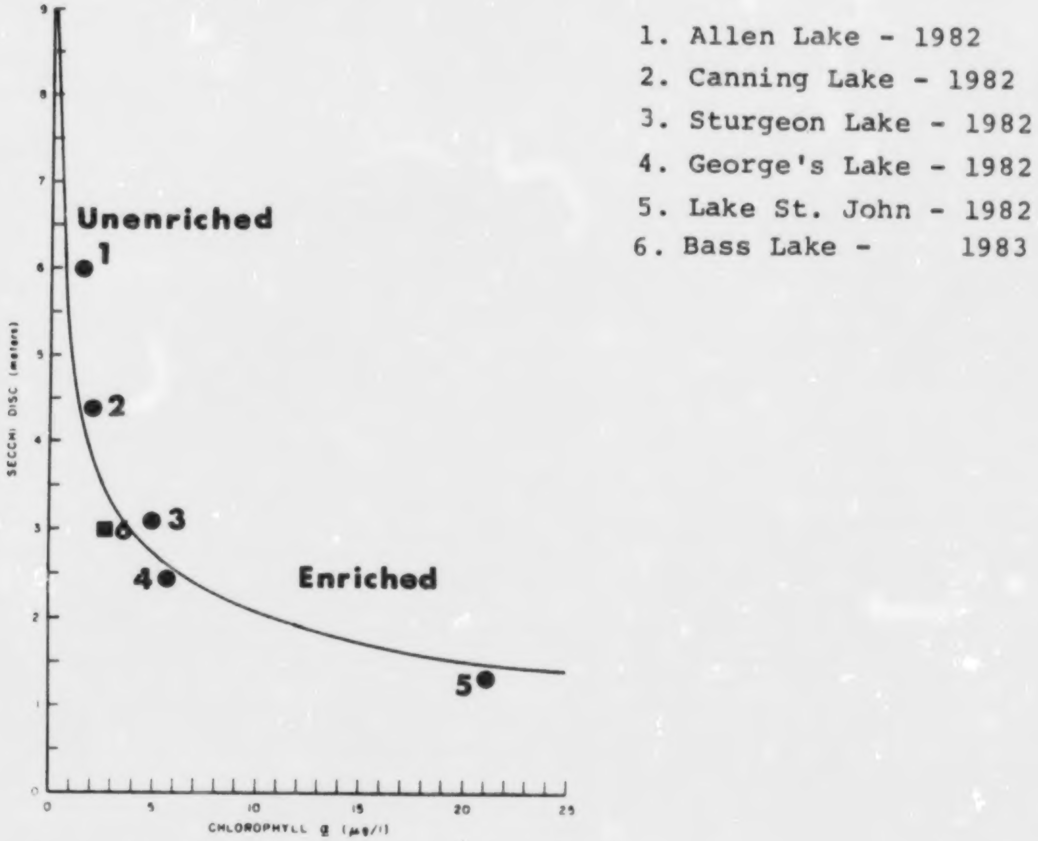
The densities of suspended algae were moderately low with chlorophyll a concentrations ranging from 1.6 to 6.9 ug/L with highest densities observed in the spring and fall. Based on the seasonal averages, Bass Lake would be considered moderately enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Bass Lake 1981 to 1983

Station	Center Bay		Deep Basin	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972			3.9*	4.1*
1973				
1974				
1975				
1976				
1977				
1978				
1979				
1980				
1981	4.6	3.0		
1982	3.8	1.2		
1983	3.0(3.9*)	2.7(2.8*)		

* MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Bass Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Bass Lake has been sampled now for three consecutive years during which time the average Secchi disc readings have decreased from 4.6 m in 1981 to 3.0 m in 1983. In 1983 the Ministry sampled Bass Lake and the average Secchi disc readings from this survey were slightly higher at 3.9 m.

Average chlorophyll a concentrations have ranged from 1.2 ug/L in 1982 to 3.0 ug/L in 1981.

We hope that participation in this program continues in order to establish any long-term water quality trends. In general water quality of Bass Lake is quite good.

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Bat Lake

Minden Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Bat Lake in 1983

Station	Centre	
Date	S.D.	Chl.a
June 12	2.0	5.3
June 19	3.0	3.8
June 26	3.25	2.5
July 3	2.5	4.3
July 10	3.0	3.7
July 17	3.0	2.2
July 23	3.0	4.9
Aug.1	2.5	3.9
Aug.3	2.5	4.7
Aug.7	3.0	1.8
Aug.14	2.75	3.1
Aug.21	3.25	3.1
Oct.10	3.0	4.3
	2.8	3.7

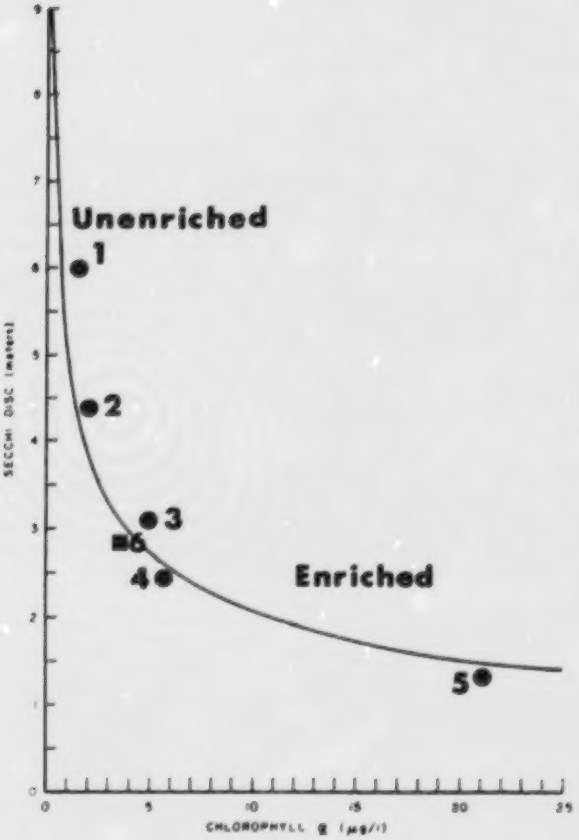
In 1983, an excellent sampling program was conducted on Bat Lake. The Secchi disc readings ranged from 2.0 to 3.25 m and the chlorophyll a concentrations ranged from 1.8 to 5.3 ug/L. These concentrations were considerably lower than the high concentrations observed in 1982.

Based on the seasonal averages, Bat Lake would be considered borderline between moderately enriched and enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Bat Lake from 1981 to 1983

Station	1.Middle	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979		
1980		
1981	2.5	5.5
1982	3.0	7.7
1983	2.8	3.7

Figure 1: The relationship between Secchi disc and chlorophyll a for Bat Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Bat Lake - 1983

Since 1981, the average Secchi disc readings have ranged from 2.5 to 3.0 m. Average chlorophyll a concentrations have ranged from 3.¯ to 7.7 ug/L. The amount of fluctuation in chlorophyll a concentrations depends on whether algae blooms have occurred. In 1982 densities of suspended algae were very high on several occasions. This is typical of enriched lakes. We hope that the enthusiastic participation in this program continues.

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Beech Lake

Stanhope Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Beech Lake in 1983

Station Date	Centre	
June 26	4.5	1.8
July 3	5.5	2.2
July 10	6.0	1.8
July 18	7.0	2.0
Aug.1	4.6	2.7
Aug.7	5.5	2.8
Aug.15	6.0	1.8
Sept.7	6.3	1.6
Sept.25	6.3	1.6
	5.7	2.0

In 1983, an excellent sampling program was conducted on Beech Lake. The Secchi disc readings ranged from 4.5 to 7.0 m and chlorophyll a concentrations ranged from 1.6 to 2.8 ug/L.

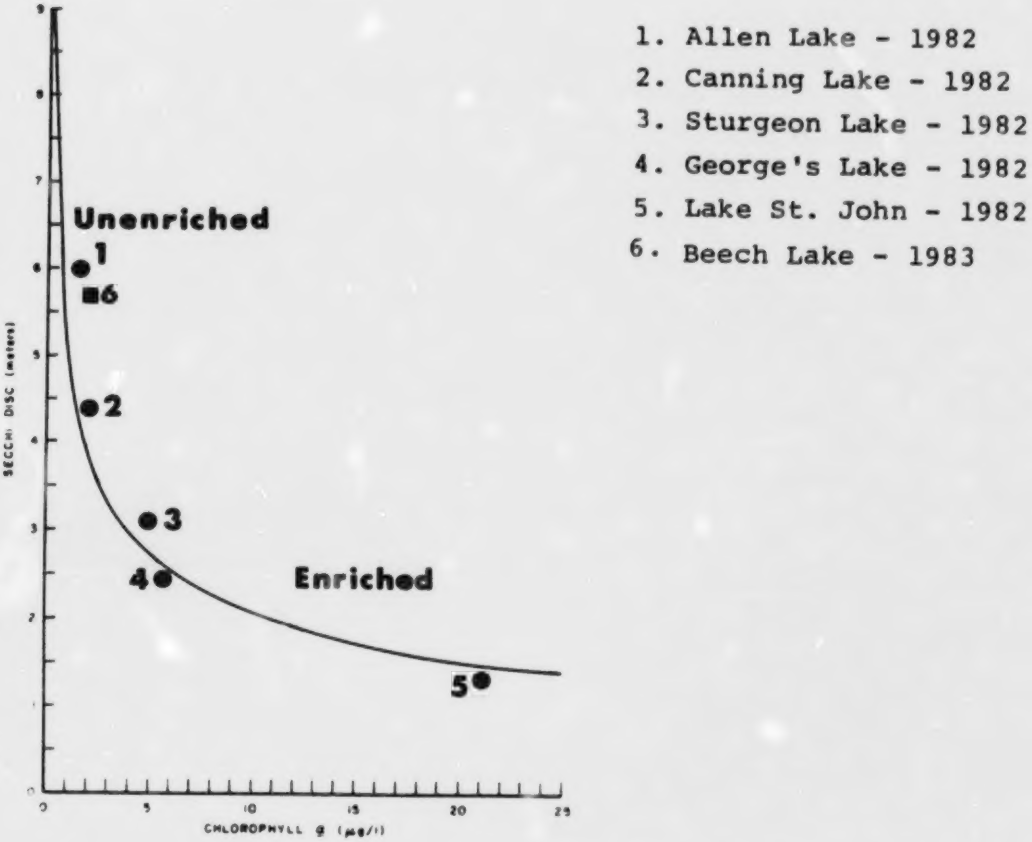
Based on the seasonal averages Beech Lake would be considered unenriched, characterized by a high degree of water transparency and low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Beech Lake from 1976 to 1983

Station	1	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976	5.3	1.9
1977	5.3*	- -
1978	4.8*	1.5*
1979	5.0*	1.9*
1980	- -	- -
1981	4.5*	3.2*
1982	4.4*	3.6*
1983	5.7	2.0

* Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Beech Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1976, the average Secchi disc readings have ranged from 4.4 to 5.7 m. The average chlorophyll a concentrations have ranged from 1.5 to 3.6 ug/L with the highest concentrations occurring in 1981 and 1982. In general, water quality of Beech Lake continues to be very good for recreational use.

We hope that participation in this program continues in order to monitor any long-term changes in water quality.

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Bella Lake

Sinclair Ward
Township of Lake of Bays

District Municipality of
Muskoka.

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Bella Lake in 1983

Station	Centre		S. Fair Hope Island		Hutcheson Bay	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
July 3	6.5	1.0	5.5	LA	5.75	1.3
July 10	5.5	1.1	-	-	-	-
July 17	6.0	0.6	-	-	-	-
Aug 1	5.25	0.7	-	-	-	-
Aug 14	6.5	1.1	-	-	-	-
Aug 21	8.0	1.5	-	-	-	-
	6.3	1.0				

LA-lab accident

In 1983, water quality in Bella Lake was excellent characterized by a high degree of water transparency and low densities of suspended algae.

Secchi disc readings ranged from 5.25 m to 8.0 m and chlorophyll a concentrations ranged from 0.6 to 1.5 ug/L.

Bella Lake would be considered unenriched.

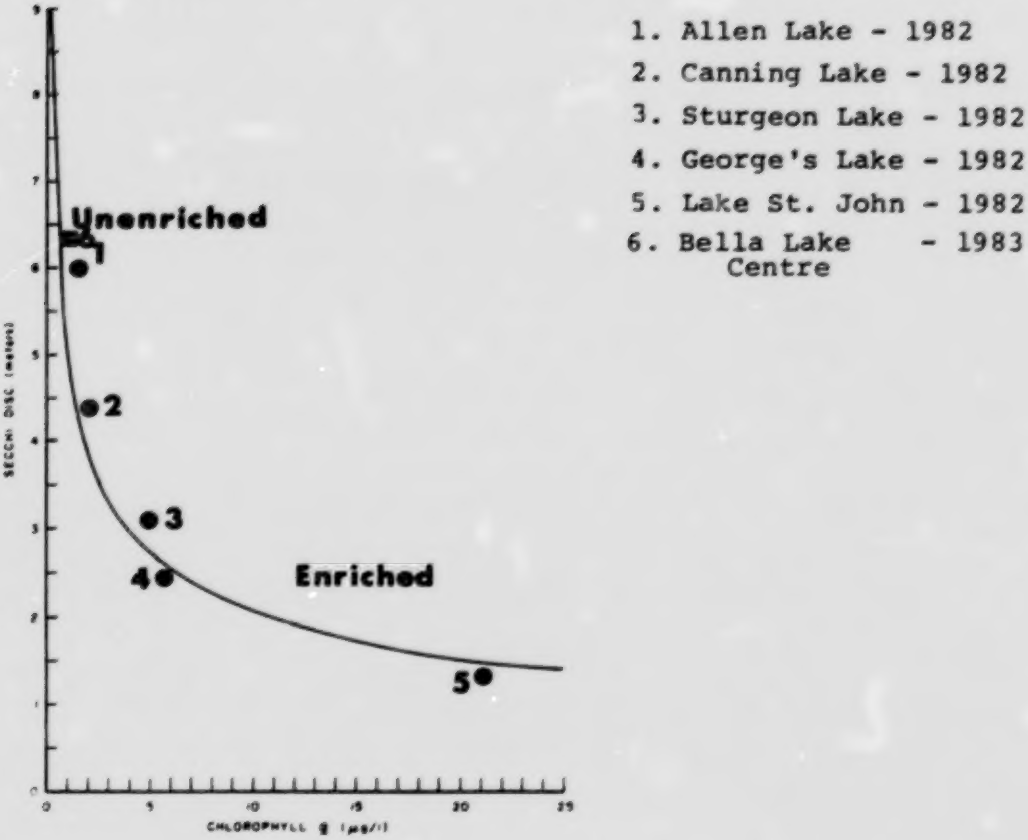
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Bella Lake in 1983

Station	Centre		S. Fair Hope Island		Hutcheson Bay	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971						
1972						
1973						
1974						
1975						
1976						
1977						
1978	(6.4*)	(2.8*)			(5.4*)	(3.7*)
1979						
1980						
1981						
1982						
1983	6.3	1.0	5.5**	LA	5.75**	1.3**

* MOE data

** based on one sample

Figure 1: The relationship between Secchi disc and chlorophyll a for Bella Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



We welcome Bella Lake into the Self-Help Program and we congratulate you on a good sampling program in 1983.

A 1978 MOE survey on Bella Lake indicated that Secchi disc readings in the centre of the lake have not changed significantly while chlorophyll a concentrations in 1983 were less than concentrations observed in 1978.

We hope that participation in this program continues in order to determine any long-term water quality changes.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Belmont Lake

Belmont & Methuen Twp.
Peterborough County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Belmont Lake in 1983

Station	Near Entrance to Crowe Lake		Near Sammy's Island	
Date	S.D.	Chl.a	S.D.	Chl.a
June 13	3.5	1.0	- -	- -
June 26	3.0	1.2	- -	- -
July 4	- -	- -	3.5	1.3
July 11	3.5	1.4	- -	- -
July 25	3.75	1.1	- -	- -
Aug. 2	3.5	0.7	- -	- -
Aug. 8	4.0	1.0	- -	- -
Aug. 25	4.25	1.2	- -	- -
Aug. 22	5.0	2.5	- -	- -
Aug. 28	6.0	ND	- -	- -
	4.1	1.3		

Based on the mean values in Table 1 for the main lake location Belmont Lake was considered unenriched with low algal densities and moderately good water clarity.

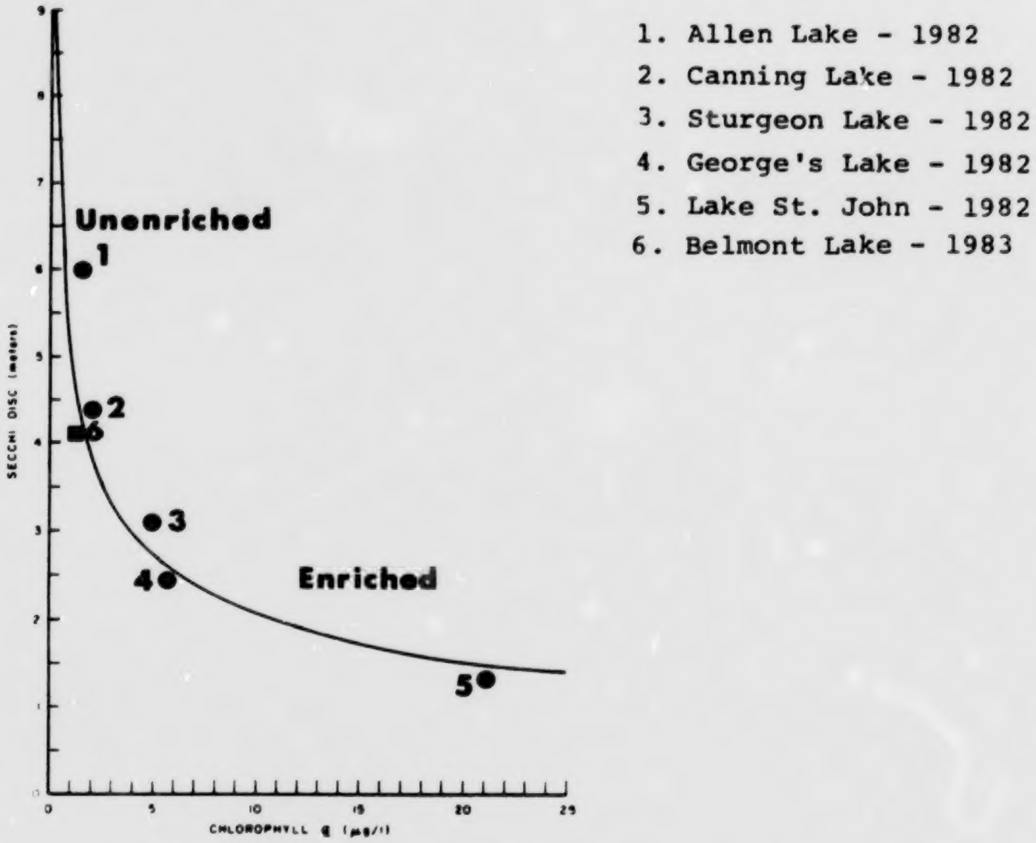
Insufficient samples were taken to allow meaningful conclusions to be reached about the other sampling location.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Belmont Lake from 1972 to 1983

Station	Near Entrance to Crowe Lake	
Year	S.D.	Chl.a
1971		
1972*	3.7	1.3
1973	- -	- -
1974	4.3	1.2
1975	4.0	2.2
1976	4.1	1.8
1977	5.3	- -
1978	4.8	1.6
1978**	4.1	2.0
1979	4.7	1.6
1980	- -	- -
1981	4.6	1.0
1982	5.0	1.2
1983	4.1	1.3

* MOE Recreational Lakes Survey
** Mean values from MOE/7 Links Water Quality Survey 1978

Figure 1: The relationship between Secchi disc and chlorophyll *a* for Belmont Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



The Enrichment Status of the lake continues to remain relatively stable. Continued participation in the program is recommended to keep up the impressive long-term data set. Congratulations to the samplers.

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Big Barnham Lake
Dudley Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Big Barnham Lake in 1983

Station Date	Main S.D.	Chl.a
June 19	5.0	2.1
July 3	4.5	1.4
July 10	4.25	LA
July 24	4.5	3.1
Aug 1	4.5	4.1
Aug 21	6.0	1.1
Sept 5	6.0	2.0
	5.0	2.3

In 1983, water quality of Big Barnham Lake was very good. The degree of water transparency was high averaging 5.0 m and ranging from 4.25 to 6.00 m.

The densities of suspended algae were moderately low ranging from 1.1 to 4.1 ug/L and averaging 2.2 ug/L.

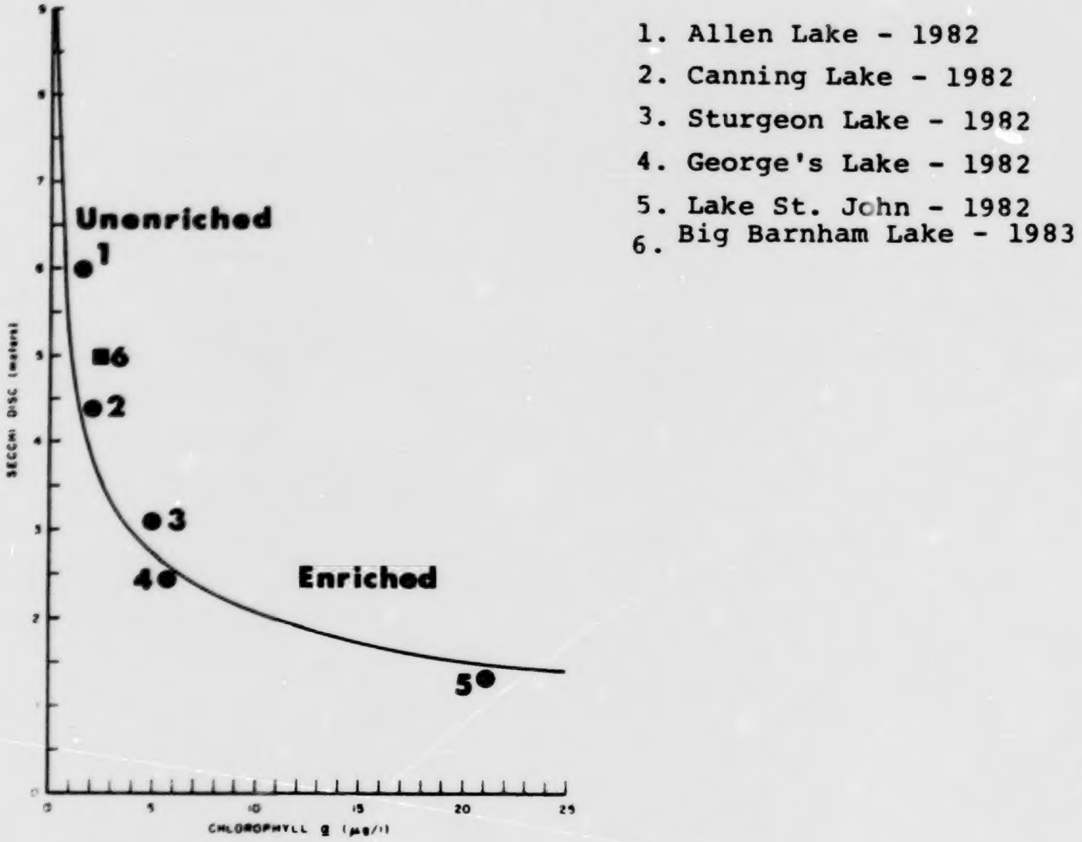
Based on the seasonal averages, Big Barnham Lake would be considered borderline between unenriched and moderately enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Big Barnham Lake from 1975 to 1983

Station Year	Main S.D.	Chl.a
1971		
1972		
1973		
1974		
1975	5.5	1.6
1976	4.7	4.0
1977	6.0	- -
1978	5.9	1.4
1979	5.6	2.0
1980	4.8	1.6
1981	4.8	3.4
1982	4.7*	1.6*
1983	5.0	2.3

* Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Big Barnham Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



We now have eight years of reliable seasonal average information which indicates that water quality in Big Barnham Lake has not changed significantly.

Average Secchi disc readings have ranged from 4.7 to 6.0 m and average chlorophyll a concentrations have ranged from 1.4 to 4.0 ug/L.

Keep up the good work.

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Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Big Glamor Lake

Glamorgan Twp.

County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Big Glamor Lake in 1983

Station	1		2		3	
	Off SW Point		Off Graham's Bay		Center	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
June 12	7.33	0.8	7.33	0.8	-	-
July 3	5.5	1.6	5.5	1.5	-	-
Aug.3	-	-	-	-	3.0	6.1
Aug.21	-	-	-	-	4.0	7.7
Sept.3	-	-	-	-	4.0	5.0
	6.4	1.2	6.4	1.2	3.7	6.3

Insufficient sampling was done in 1983 to obtain reliable seasonal averages, however, results of a 1983 MOE survey of the lake (Table 2) indicated that Big Glamor Lake had a high degree of water transparency and low densities of suspended algae. Based on the seasonal averages from the MOE survey, Big Glamor Lake would be considered unenriched.

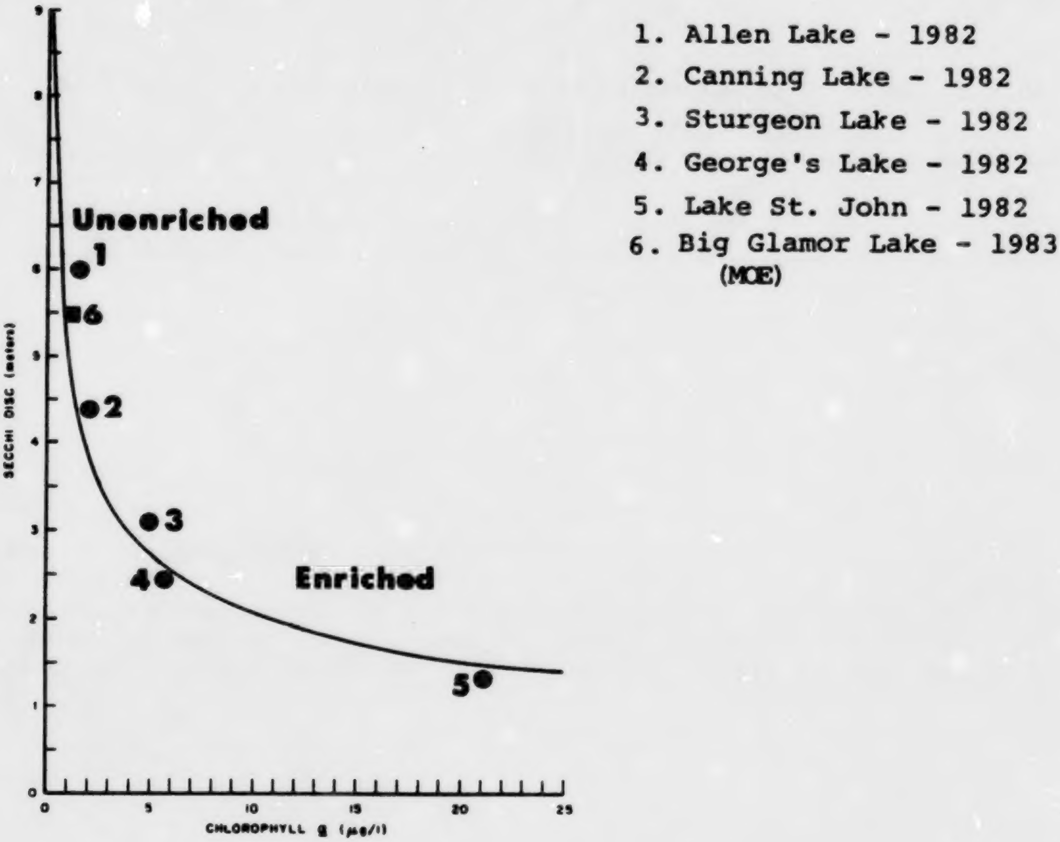
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Big Glamor Lake from 1971 to 1983

Station	1		2		3	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
					4.8	1.6
1971					3.6	3.4
1972					4.3*	1.7*
1973						
1974						
1975						
1976						
1977						
1978						
1979						
1980						
1981						
1982						
1983	6.4*	1.2*	6.4*	1.2*	3.7*(5.5**)	6.3* (1.2**)

* Based on less than 6 samples

** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Big Glamor Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1971, the average Secchi disc readings have ranged from 3.6 to 6.4 m and average chlorophyll a concentration have ranged from 1.2 to 6.3 ug/L. The large amount of fluctuation in these readings is probably the result of sporadic sampling in several locations. In order to improve the results obtained from this program, we suggest that one station be sampled at least six times throughout the cottage season.

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Big Hawk Lake
Stanhope Twp.
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Big Hawk Lake in 1983

Station	1 North End		2 South End	
Date	S.D.	Chl.a	S.D.	Chl. a
June 19	8.5	1.1	9.0	1.0
July 3	8.5	1.2	8.0	1.2
July 17	10.0	0.4	9.5	0.8
Aug 01	8.0	0.9	9.0	1.0
Aug 14	9.0	1.0	8.5	1.2
Sept 3	-	-	9.0	2.2
	8.8	0.9	8.8	1.2

In 1983, water quality of Big Hawk Lake was excellent. The degree of water transparency was high with Secchi disc readings ranging from 8.0 to 10 m at the north end of the lake and from 8.0 to 9.5 m at the south end.

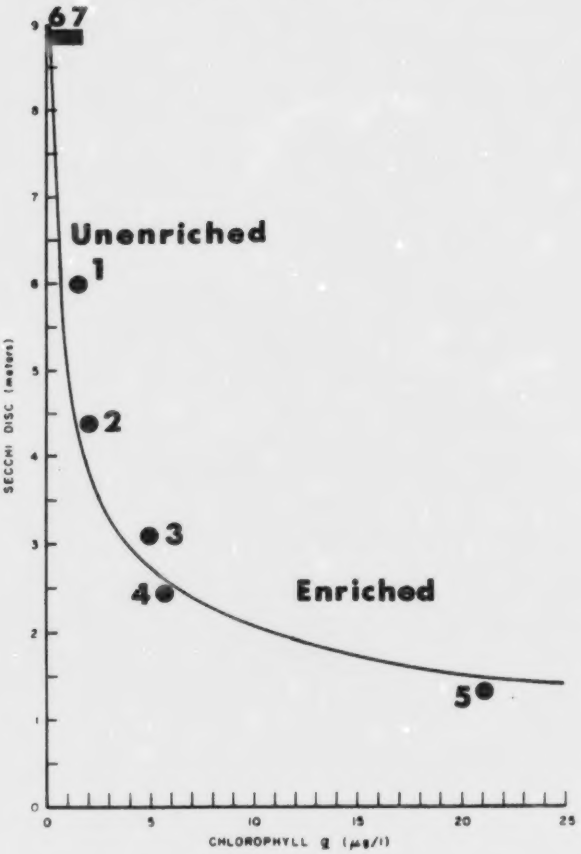
Densities of suspended algae were low ranging from 0.4 to 1.2 ug/L at the north end and from 0.8 ug/L to 2.2 ug/L at the south end.

Based on the seasonal averages, Big Hawk Lake would be considered unenriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Big Hawk Lake from 1972 to 1977 and from 1983

Station	Main		1 North End		2 South End	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971						
1972	6.2	0.8				
1973	7.2	1.0				
1974	6.9	0.7				
1975	7.0	1.2				
1976	6.8	1.1				
1977	7.7	-				
1978	-	-				
1979	-	-				
1980	-	-				
1981	-	-				
1982	-	-				
1983	-	-	8.8	0.9	8.8	1.2

Figure 1: The relationship between Secchi disc and chlorophyll a for Big Hawk Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Big Hawk Lake - 1983
   North End
7. South End - 1983

The 1983 results from Big Hawk Lake indicate that the Secchi disc readings were higher than observed from 1972 to 1977. This could be due to individual differences in measurement but we recommend that sampling be continued to determine any long-term changes in water transparency. Chlorophyll a concentrations have not changed since 1972.

Water quality of Big Hawk Lake continues to be excellent.

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Big Straggle Lake
Harcourt Twp.
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Big Straggle Lake in 1983

Station	Main	
Date	S.D.	Chl.a
June 19	6.5	1.4
July 3	4.9	2.6
July 17	4.0	3.9
Aug 21	4.5	5.4
	5.0	3.3

In 1983, Big Straggle Lake was sampled four times with the Secchi Disc readings ranging from 4.0 to 6.5 m and averaging 5.0 m indicating a high degree of water transparency. The chlorophyll a concentrations ranged from 1.4 to 5.4 ug/L averaging 3.3 ug/L.

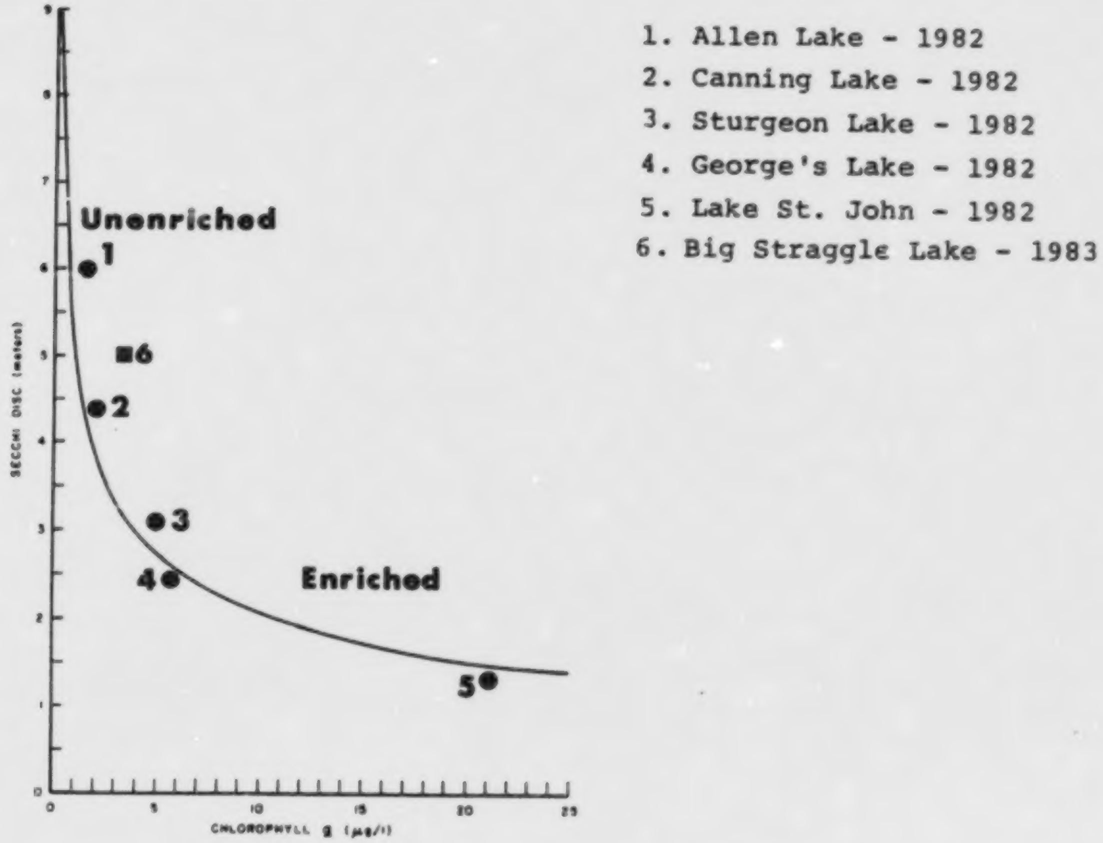
Based on the available information, Big Straggle Lake would be considered moderately enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Big Straggle Lake from 1971 to 1983

Station	Main		Deep Basin	
Year	S.D.	Chl.a	S.D.	Chl.a
1971	3.8	2.1		
1972	-	-		
1973	4.6	4.0		
1974	4.8	1.4		
1975	6.0	1.7		
1976	4.5	1.8		
1977	5.7	-	4.7*	- -
1978	5.4	2.2		
1979	4.6	3.1		
1980	5.0	3.0		
1981	5.9	3.2		
1982	3.6**	2.9**		
1983	5.0**	3.3**		

* MOE Data
** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Big Straggle Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1971, average Secchi disc readings have ranged from 3.6 m in 1982 to 6.0 m in 1975. There has been no definite trend to indicate a change in water transparency since 1971.

The average chlorophyll a concentrations have ranged from 1.4 to 4.0 ug/L with no definite trend toward increasing densities of suspended algae.

We recommend that this program be continued and sampling frequency be increased if possible.

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Birch Bark Lake
(Trounce)

Galway Township

Peterborough County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Birch Bark Lake in 1983

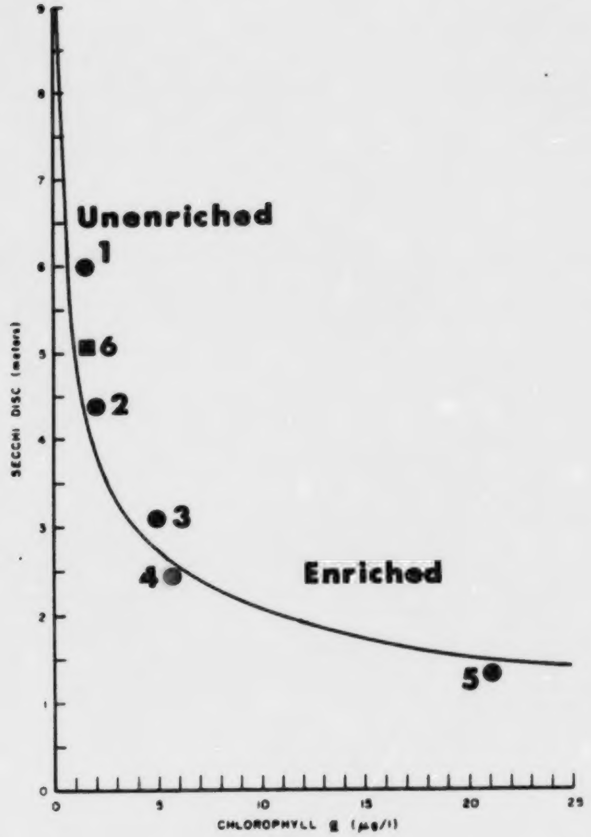
Station	1	
Date	S.D.	Chl.a
June 19	5.0	1.9
June 26	4.2	1.7
July 3	5.2	2.0
July 10	5.2	1.5
July 17	5.2	1.7
Sept.4	5.5	1.3
Oct. 10	5.7	1.4
	5.1	1.6

Based on the mean values in table 1 Birch Bark Lake was considered unenriched with low algal densities and good water clarity.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Birch Bark Lake from 1977 to 1983

Station	1	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977	4.8	- -
1978	5.3	1.8
1979	5.3	1.9
1980	- -	- -
1981	5.0	2.6
1982	4.8	2.5
1983	5.0	1.6

Figure 1: The relationship between Secchi disc and chlorophyll a for Birch Bark Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Birch Bark Lake - 1983

Continued participation in the sampling program is encouraged.

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Black Lake

Lutterworth Twp.

County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Black Lake in 1983

Station	Middle		North End		South End	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
June 26	3.75	2.8	-	-	-	-
Aug 7	4.8	3.9	-	-	-	-
Aug 14	4.5	3.4	1.5	4.0	1.7	4.5
Aug 21	4.9	2.5	1.5	2.7	1.5	1.8
Aug 27	4.0	3.9	-	-	-	-
Sept 5	4.0	3.6	-	-	-	-
Sept 25	-	-	2.4	4.1	2.2	3.6
Oct 2	-	-	2.2	4.0	2.0	7.0
Oct 10	-	-	2.0	3.9	2.0	2.5
	4.3	3.4	1.9	3.7	1.9	3.9

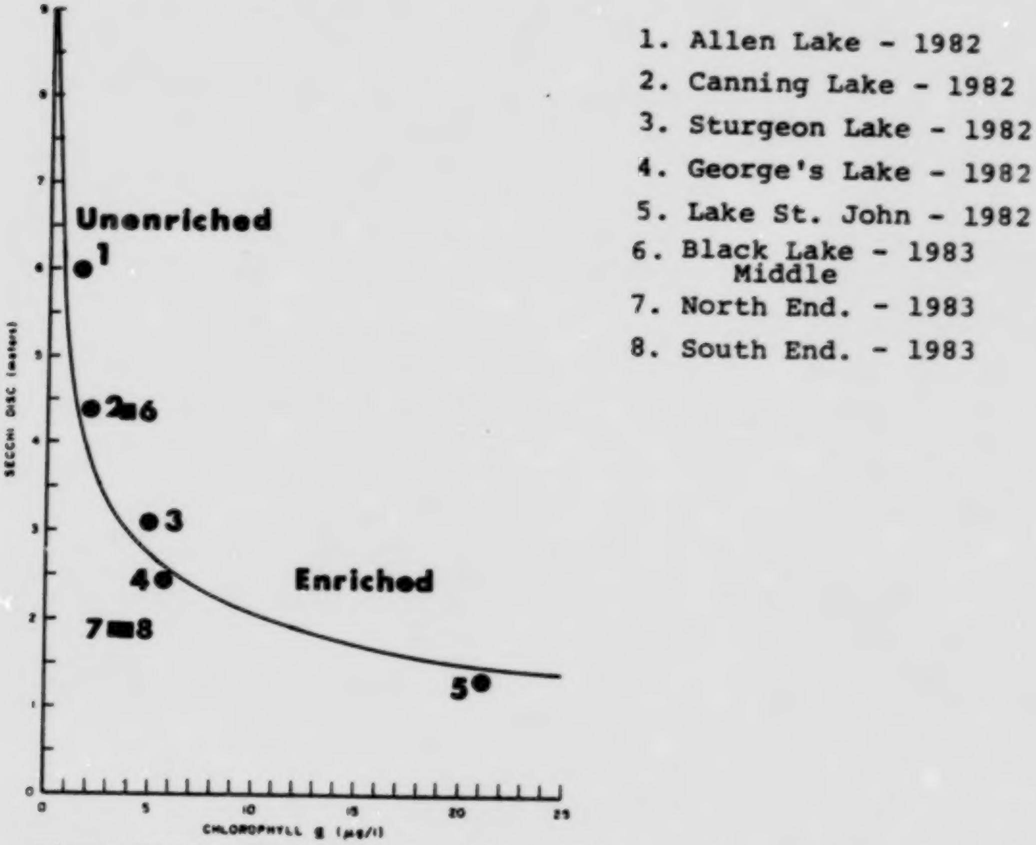
In the middle part of the lake, water transparency was moderately high and densities of suspended algae were moderately high. At the north and south ends of the lake, water transparency was quite low. This could be due to the shallowness of the water in this area resulting in higher densities of aquatic plants and algae. Based on the information collected Black Lake would be considered moderately enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Black Lake in 1983

Station	Middle		North End		South End	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971						
1972						
1973	4.6	2.3				
1974	5.0*	3.7*				
1975	5.0*	2.3*				
1976						
1977						
1978						
1979						
1980						
1981						
1982						
1983	4.3	3.4	1.9*	3.7*	1.9*	3.9*

* based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Black Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1973, the water quality of the main station in Black Lake has not changed significantly. Water quality remains very good for recreational use.

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Black Lake

Wood Ward

Township of Muskoka Lakes

District Municipality of Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Black Lake in 1983

Station	South		North	
Date	S.D.	Chl.a	S.D.	Chl.a
May 23	1.75	2.3	1.5	1.6
June 5	1.3	2.1	1.3	1.2
June 12	1.5	2.9	1.3	2.9
June 19	1.5	4.0	1.5	4.6
June 26	1.5	5.2	1.5	4.6
July 3	1.5	3.9	1.5	3.2
July 10	1.5	3.6	1.5	2.7
July 24	1.5	3.7	1.5	2.1
Aug.1	1.5	3.2	1.5	AD
Aug.7	1.5	1.8	2.0	1.9
Aug.28	1.5	2.3	1.5	3.6
Sept.4	5.6	1.2	5.2	1.1
Sept.5	2.0	3.8	1.5	2.1
Sept.11	2.5	2.4	2.4	1.4
Sept.18	1.5	3.4	1.5	3.3
	1.9	3.1	1.8	2.6

Once again an excellent sampling program has been done in 1983. The degree of water transparency was low because of the very noticeable brown colour in the water which results from peat substances in the watershed. Densities of suspended algae were moderately low this year. Based on the seasonal averages Black Lake could be considered moderately enriched.

AD- anomalous data withdrawn

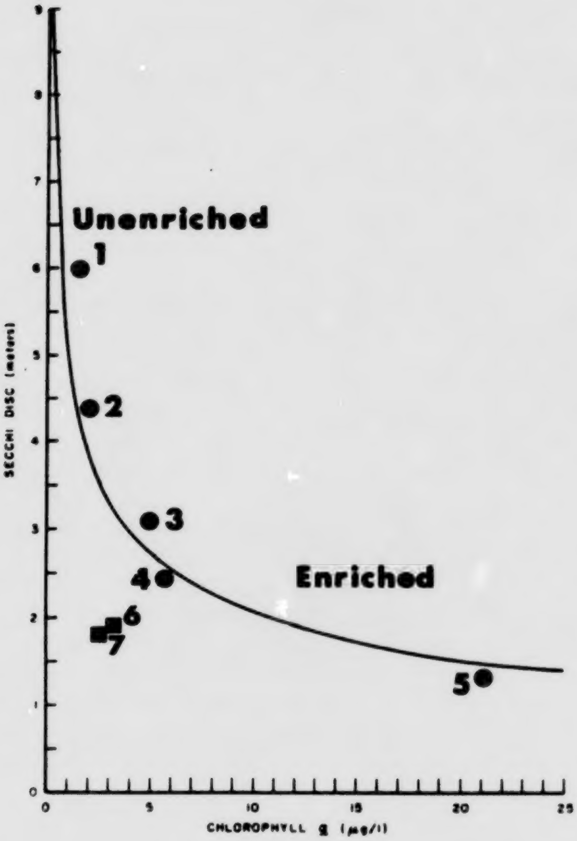
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Black Lake from 1975 to 1983

Station	Main		South		North	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971						
1972						
1973						
1974						
1975	1.8*	3.8*	1.8*	4.1*	1.8	4.1
1976						
1977						
1978						
1979			1.3	8.4	1.3	9.0
1980			1.2	6.8	1.2	5.8
1981			1.4	9.7	1.2	6.0
1982			1.3	5.7	1.3	3.3
1983	1.9**	3.0**	1.9	3.1	1.8	2.6

* Based on less than 6 samples

** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll *a* for Black Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Black Lake - 1983
   South
7. North - 1983

Densities of suspended algae in 1983 were considerably lower than those observed in previous years. The reason for this is not apparent since the weather in 1983 was very favourable for algae growth. The degree of water transparency did not change significantly.

We congratulate you on an excellent sampling program so far. Keep up the good work.

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Boshkung Lake

Stanhope Twp.

County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Boshkung Lake in 1983

Station	Mid-Lake	
Date	S.D.	Chl.a
June 14	4.45	2.9
June 22	5.47	1.6
July 6	4.9	1.2
July 27	5.1	4.4
Sept 9	6.25	1.3
Oct.6	4.25	1.3
	5.1	2.1

In 1983, the Secchi disc readings ranged from 4.45 to 6.25 m and chlorophyll a concentrations ranged from 1.2 to 4.4 ug/L

In general, the degree of water transparency remained high throughout the sampling period and densities of suspended algae remained moderately low. Based on the seasonal averages, Boshkung Lake would be considered borderline between unenriched and moderately enriched.

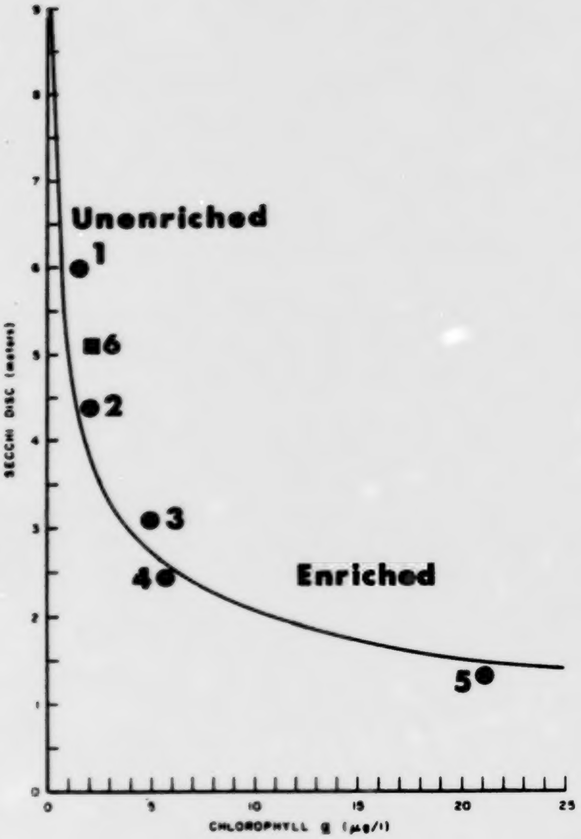
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Boshkung Lake from 1972 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972	5.6	0.9
1973	5.6*	2.0*
1974	- -	0.9
1975	5.2*	1.4
1976	- -	- -
1977	6.6	- -
1978	- -	- -
1979	5.4	1.6
1980	4.6	2.3
1981	5.8*	2.1*
1982	4.8*	4.8*
1983	5.1(5.2**)	2.1(1.5**)

* Based on less than 6 samples

** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Boshkung Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Boshkung Lake - 1983

Since 1972 there have been no significant changes in water quality except for 1982 when a high average chlorophyll a concentration of 4.8 ug/L was observed as the result of a spring algae bloom. In all other years densities of suspended algae were much lower.

We hope that participation in this program is continued.

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Bruce Lake

Medora Ward

Township of Muskoka Lakes

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Bruce Lake in 1983

Station Date	Centre S.D.	 Chl.a
June 11	3.0	2.8
June 25	4.0	9.0
July 2	3.3	5.5
July 10	3.5	LA
July 23	3.5	1.9
Aug.13	2.75	2.6
Aug.28	3.75	7.4
Oct.10	3.3	1.7
	3.4	4.4

In 1983, the degree of water transparency was moderately low and the densities of suspended algae were high particularly on June 25 and Aug.28. Based on the seasonal averages, Bruce Lake would be considered borderline between moderately enriched and enriched.

LA-lab accident

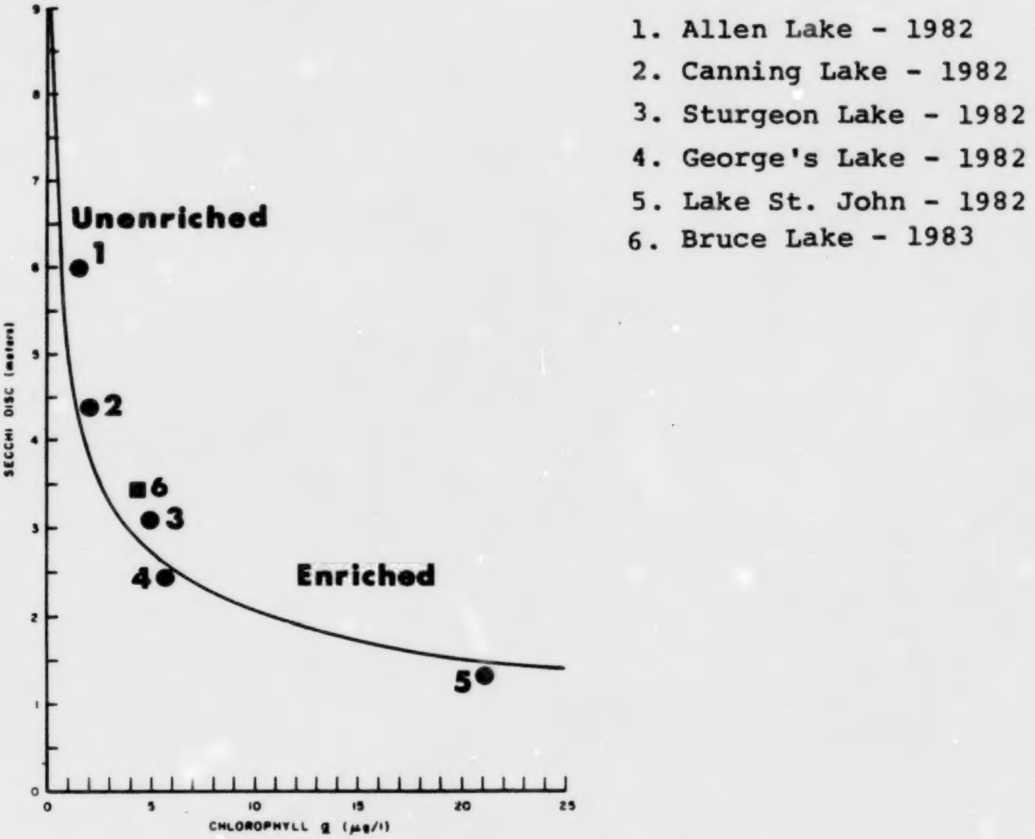
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Bruce Lake from 1977 to 1983

Station Year	A Centre S.D.	 Chl.a
1971		
1972		
1973		
1974	3.4*	3.6*
1975	- -	- -
1976	- -	- -
1977	1.8*	- -
1978	3.6*	4.8*
1979	3.9	5.2
1980	3.8	4.8
1981	3.1	2.0*
1982	3.3	4.5
1983	3.4(4.2**)	4.4(3.6**)

* Based on less than 6 samples

** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Bruce Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1974 there have been no major changes in water quality. Water quality continues to be good for recreational use, however, Bruce Lake is subject to periodically high densities of suspended algae.

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Buckskin Lake

Monmouth Twp.

County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Buckskin Lake in 1983

Station	Lake Centre	
Date	S.D.	Chl.a
July 1	4.0	7.0*
July 24	3.23	7.6*
Aug 1	NG	1.0
Aug 7	6.0	1.6
	4.4	4.3

NG not given
* samples taken to ½ Secchi disc reading depth therefore not representative

Unfortunately the results of the 1983 sampling program are insufficient to draw reliable conclusions re. the water quality. The lake appears to have a moderately high degree of water transparency.

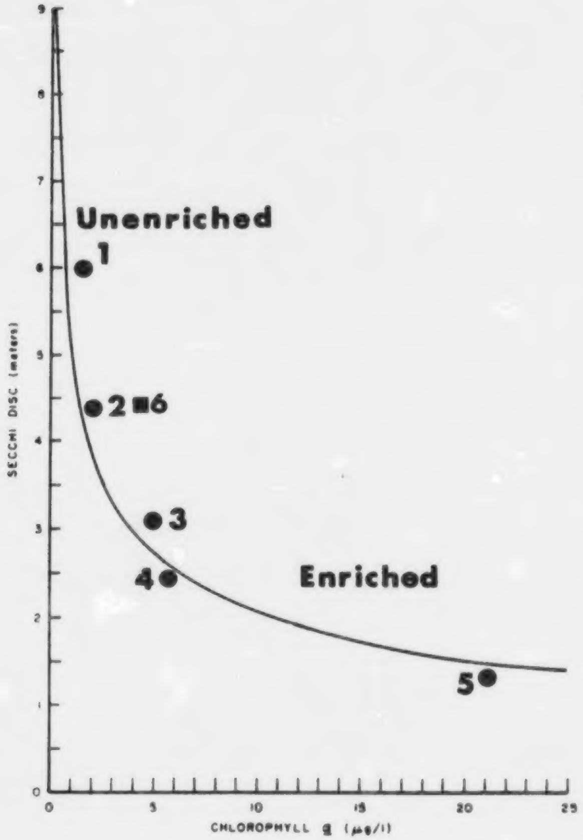
We recommend that sampling frequency be increased and chlorophyll samples be taken through a depth equal to twice the Secchi depth. We also suggest that the Secchi disc readings be recorded on the submission sheet.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Buckskin Lake in 1983

Station	Centre	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979		
1980		
1981		
1982		
1983	4.4*	4.3*

* based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Buckskin Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Buckskin Lake - 1983

We hope that participation in this program continues next year since we have no information on the water quality of Buckskin Lake.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Cameron Lake

Fenelon Township
Victoria County

TABLE 1: **Secchi Disc (m) and chlorophyll a (ug/L) data collected from** Cameron Lake in 1983

Station	Fell's Bay		North End	
Date	S.D.	Chl.a	S.D.	Chl.a
May 29	3.4	0.6	- -	- -
June 19	- -	- -	3.45	3.2
July 12	3.78	1.3	- -	- -
Aug. 07	3.77	1.8	- -	- -
Aug. 21	- -	- -	3.72	1.5
	3.7	1.2	3.6	2.4

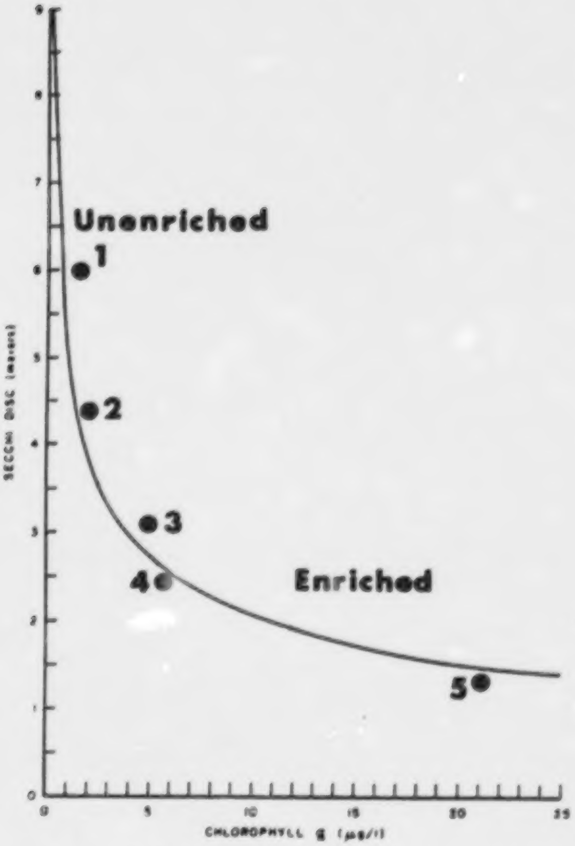
Insufficient samples were taken to allow meaningful conclusions to be reached. It is suggested that at least six samples be taken throughout the ice-free period.

TABLE 2: **Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from** Cameron Lake from 1971 to 1983

Station	Fell's Bay		North End	
Year	S.D.	Chl.a	S.D.	Chl.a
1971 *	3.9	2.8		
1972 *	3.8	2.8		
1973 *	5.0	2.6		
1974				
1975				
1976 *	3.7	1.9		
1977				
1978				
1979				
1980				
1981	4.4**	1.6**		
1982	2.54**	1.3**		
1983	3.7	1.2**	3.6	2.4**

* MOE sampling at mid-lake
** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982

If participation in the program is to be continued it is recommended that more samples be taken.

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Canning Lake

Minden & Snowdon Twps.

County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Canning Lake in 1983

Station	Main	
Date	S.D.	Chl.a
June 5	4.0	2.3
June 26	3.5	1.8
July 17	3.5	2.4
Aug 1	4.2	2.6
Aug 21	6.0	2.1
Sept.5	5.0	2.0
	4.4	2.2

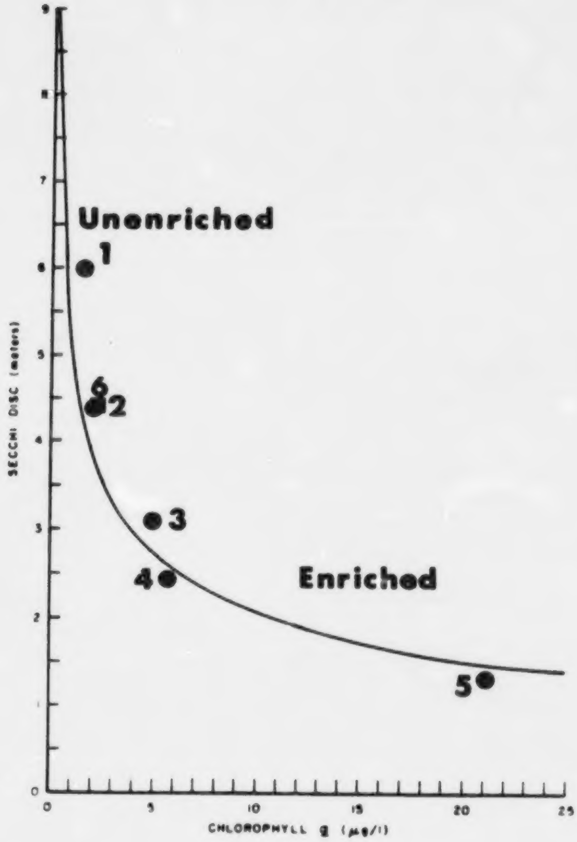
In 1983, the Secchi disc readings ranged from 3.5 to 6.0 m and chlorophyll a concentrations ranged from 1.8 to 2.6 ug/L. Based on the seasonal averages, Canning Lake would be considered moderately enriched characterized by a moderately high degree of water transparency and moderately low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Canning Lake from 1972 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972	4.6	3.0
1973	5.6	1.8
1974	4.8	1.6
1975	4.9	1.6
1976	5.6(5.4*)	1.9(2.0*)
1977	5.5	- -
1978	4.4	2.3
1979	4.3	2.4
1980	3.8	2.3
1981	4.2	2.9
1982	4.4	2.2
1983	4.4	2.2

*MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Canning Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Canning Lake - 1983

An excellent long-term record of water quality has been established for Canning Lake. Water quality remains very good for recreational use and there have been no significant changes in water quality since 1972. Keep up the good work.

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Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Chandos Lake

Chandos Township
Peterborough County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Chandos Lake in 1983

Station	West Bay		Gilmour Bay		South Bay		Tanners Bay	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
July 19	4.5	1.2	3.5	2.5	4.5	1.5	4.5	1.4
Aug. 13	5.5	2.3	3.5	4.3	5.5	2.2	5.4	2.3
	5.0	1.8	3.5	3.4	5.0	1.9	4.1	1.9

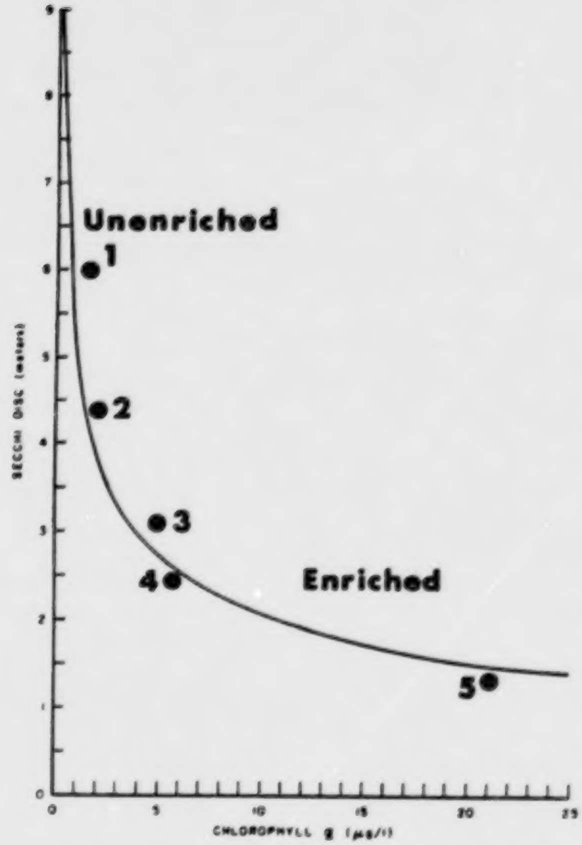
Insufficient samples were collected to allow meaningful conclusions to be reached. It is recommended that at least six samples be taken throughout the ice-free period.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Chandos Lake from 1972 to 1983

Station	South Bay(1)		Gilmour Bay		North End		South End	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971								
* 1972	3.6	2.0						
** 1973	4.9	1.7						
* 1974	4.0	1.2						
T 1975	5.2	2.3						
1976	4.0	2.2	3.3	5.2				
1977	4.6	- -	4.4	- -				
1978	4.1	2.6	4.1	4.4	4.1	2.6	4.3	2.7
1979	- -	- -	3.0	3.9	- -	- -	3.5	2.2
1980	- -	- -	3.4	4.8	- -	- -	3.5	2.5
1981	- -	- -	4.0	3.0	- -	- -	4.5	2.0
1982	4.8	1.6	4.8	2.3			4.8	1.6
1983								

* Mean of 4 stations ** Mean of 3 stations T Based on 1 set of data.

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982

Continued participation in the program is encouraged with more frequent sampling.

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Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Chan Sharma

Clear Lake

Oakley Ward
Town of Bracebridge
District Municipality
of Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Clear Lake in 1983

Station	Main	
Date	S.D.	Chl.a
April 26	7.2	1.3
May 10	6.0	1.6
May 24	6.2	1.8
June 20	6.1	1.6
July 10	6.9	1.3
July 25	7.5	1.6
Sept 11	7.0	2.0
	6.7	1.6

Once again, an excellent sampling program has been conducted on Clear Lake in 1983. The degree of water transparency was high throughout the sampling period with Secchi disc readings ranging from 6.0 to 7.5 m. The densities of suspended algae were low with chlorophyll a concentrations ranging from 1.3 to 2.0 ug/L.

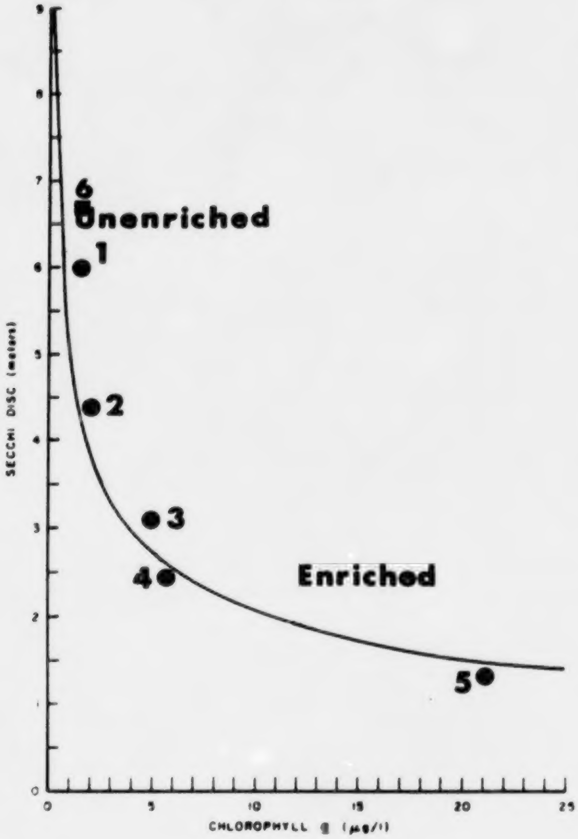
Based on the seasonal averages, Clear Lake would be considered unenriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Clear Lake from 1977 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977	7.1	- -
1978	6.6	1.5
1979	7.1	2.3
1980	6.8	2.0
1981	7.0	2.2
1982	6.3	1.6
1983	6.7(7.0*)	1.6(2.0*)

* MOE

Figure 1: The relationship between Secchi disc and chlorophyll a for Clear Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Clear Lake - 1983

Since 1977, there have been no significant changes in water quality in Clear Lake. Average Secchi disc readings have ranged from 6.3 to 7.1 m and average chlorophyll a concentrations have ranged from 1.5 to 2.3 ug/L. Water quality remains excellent for recreational use.

Keep up the good work Ted.

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Clearwater Lake

Morrison Ward
Town of Gravenhurst

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Clearwater Lake in 1983

Station	Centre	
Date	S.D	Chl.a
June 12	5.3	3.5
June 19	5.6	3.2
June 26	6.6	2.3
July 3	5.8	2.2
July 10	5.5	1.7
July 17	5.7	1.7
Aug 7	7.8	2.2
Aug 14	6.6	1.7
Aug 21	6.6	2.3
Aug 28	5.9	1.5
Sept 5	7.0	0.9
Sept 11	6.8	1.0
Sept 25	6.6	1.4
	6.3	2.0

Once again an excellent sampling program was done on Clearwater Lake in 1983.

The degree of water transparency was high throughout the sampling period with Secchi disc readings ranging from 5.3 to 7.8 m. The densities of suspended algae were low with chlorophyll a concentrations ranging from 0.9 to 3.5 ug/L.

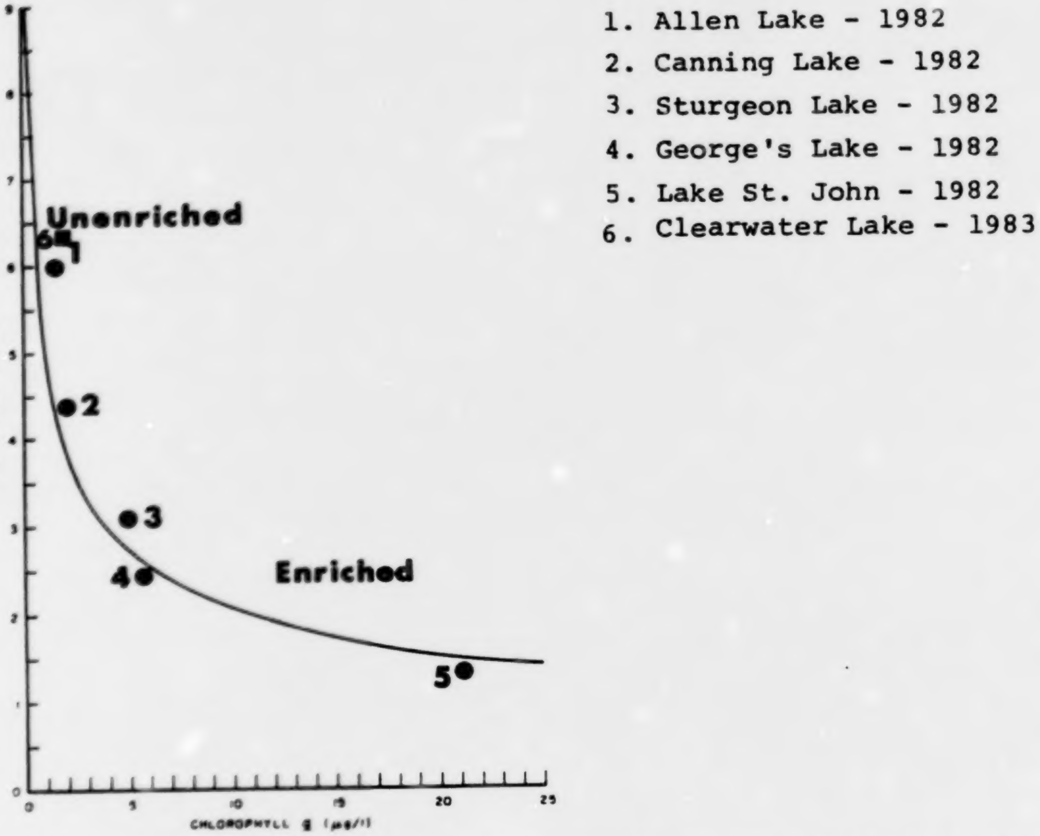
Based on the seasonal averages, Clearwater Lake would be considered unenriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Clearwater Lake from 1975 to 1983

Station	1	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975	4.3	1.5
1976	5.4	1.8
1977	5.3	- -
1978	5.9*	2.5*
1979	5.5	3.4
1980	5.6	2.6
1981	5.4	3.0*
1982	6.3	3.5
1983	6.3	2.0

* Based on less than 6 samples.

Figure 1: The relationship between Secchi disc and chlorophyll a for Clearwater Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1975, average Secchi disc readings have increased from 4.3 m to 6.3 m in 1983. Average chlorophyll a concentrations have not shown any definite trends although they were relatively high from 1979 to 1982.

We hope that the enthusiastic participation in this program continues. Keep up the good work.

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Clement Lake

Monmouth Twp.
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Clement Lake in 1983

Station	1 North End		2 South End	
Date	S.D	Chl.a	S.D.	Chl.a
June 5	7.5	0.7	7.5	0.7
June 19	5.0	0.9	4.5	1.1
July 3	4.0	1.3	4.5	1.4
July 24	4.0	1.5	4.0	1.3
Aug.7	4.0	1.5	4.0	1.3
Aug 21	4.5	1.3	3.5	1.2
Sept.25	4.0	1.5	3.5	1.8
	4.7	1.2	4.5	1.3

In 1983, the degree of water transparency was moderately high at both stations with the highest Secchi disc readings in early June. The densities of suspended algae were low throughout the sampling period.

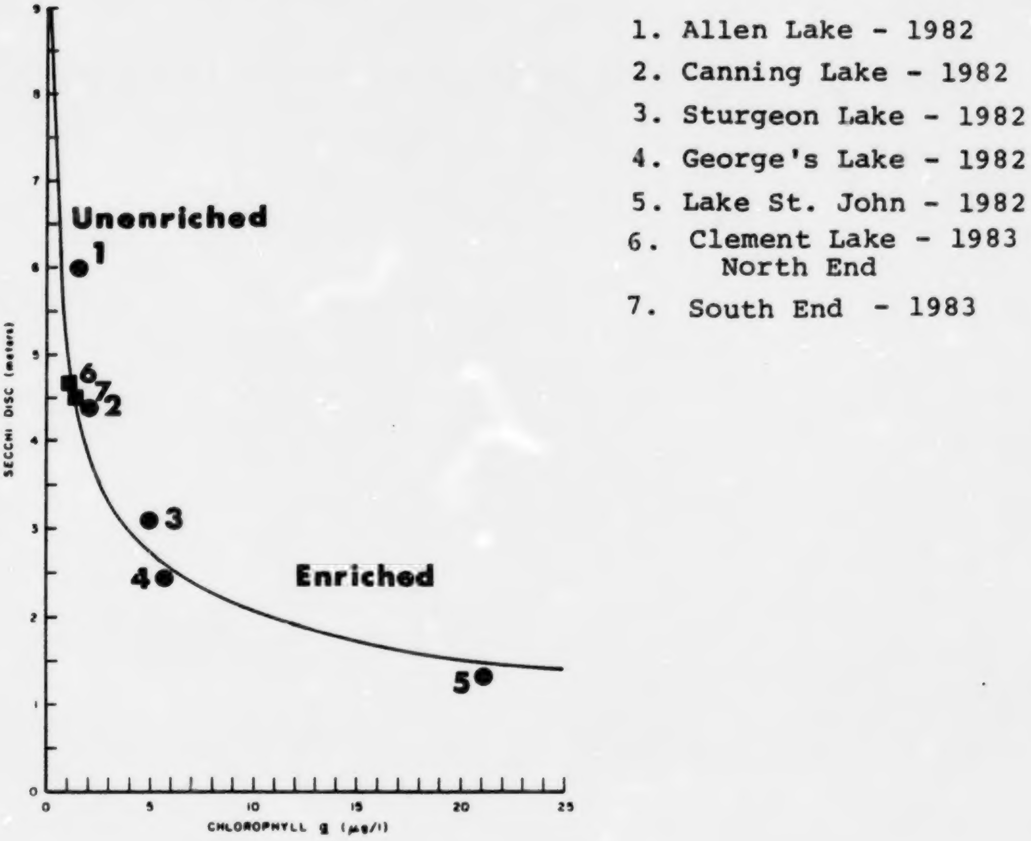
Based on the seasonal averages Clement Lake should be considered borderline between moderately enriched and unenriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Clement Lake in 1983

Station	1 North End		2 South End	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973				
1974				
1975				
1976				
1977				
1978				
1979				
1980	4.7*	2.2*		
1981				
1982				
1983	4.7	1.2	4.5	1.3

* MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Clement Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



We hope that participation in this program continues in order to monitor any long-term changes in water quality which may occur.

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Crego Lake

Somerville Township

Victoria County

TABLE 1: **Secchi Disc (m) and chlorophyll a (ug/L) data collected from** Crego Lake in 1983

Station Date	N. Centre Lake S.D.	 Chl.a
June 5	3.0	1.6
June 19	3.0	4.4
July 6	4.0	3.3
July 18	4.3	3.5
July 24	4.0	5.1
Aug. 7	4.5	3.1
Sept.5	4.7	1.8
	3.9	3.3

Based on the 1983 mean values for Secchi disc and chlorophyll a concentration Crego Lake was considered enriched with moderate algal density and moderate water clarity. A Seasonal trend of improving water clarity was evident in the 1983 results but with no corresponding decreasing trend in algal density. This suggests that layering of algae is occuring from mid summer into fall.

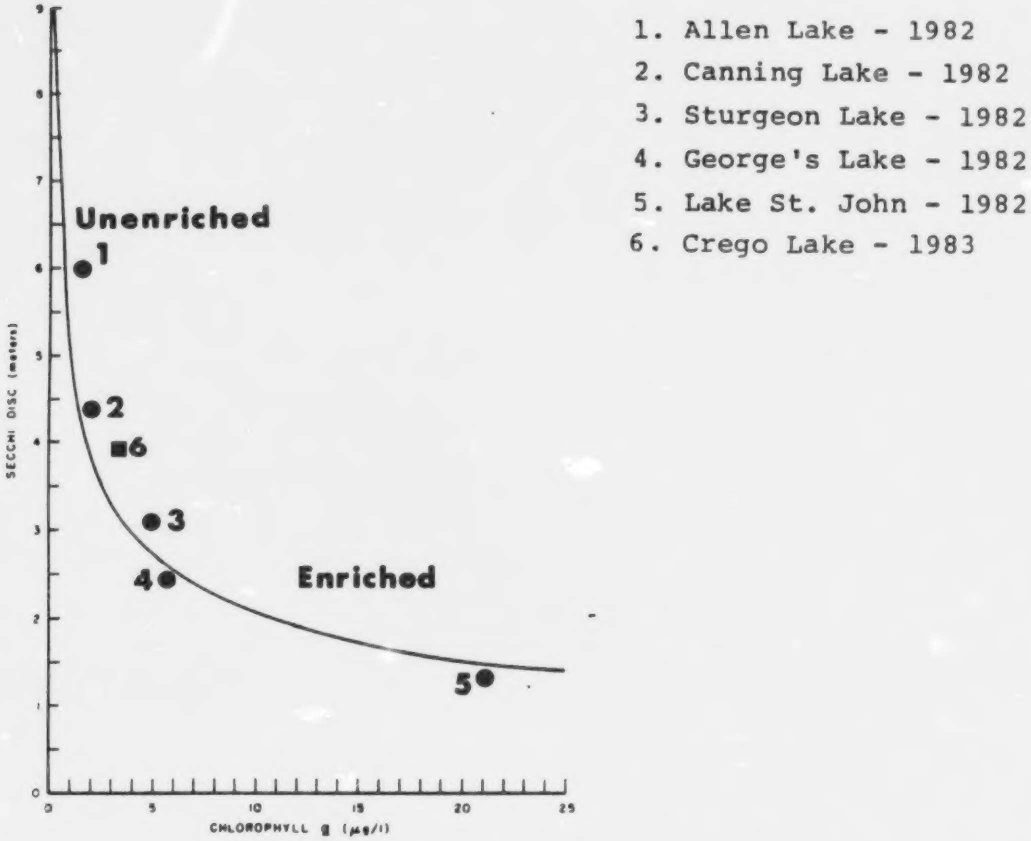
TABLE 2: **Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from** Crego Lake from 1977 to 1983

Station Year	Main S.D.	 Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977	4.0	- -
1978	4.3	3.7
1979	4.8	3.4
1980	3.8*	3.1**
1981	- -	- -
1982	3.4	3.8
1983	3.9	3.3

* Based on 3 samples

** Based on 4 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Crego Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Crego Lake - 1983

The mean values in Table 2 indicate that Crego Lake continues to have a relatively stable enrichment status. Continued participation in the sampling program is encouraged to confirm long-term trends.

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Crown Lake

Livingstone Twp.

County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Crown Lake in 1983

Station	1	
Date	S.D.	Chl.a
June 19	5.25	1.8

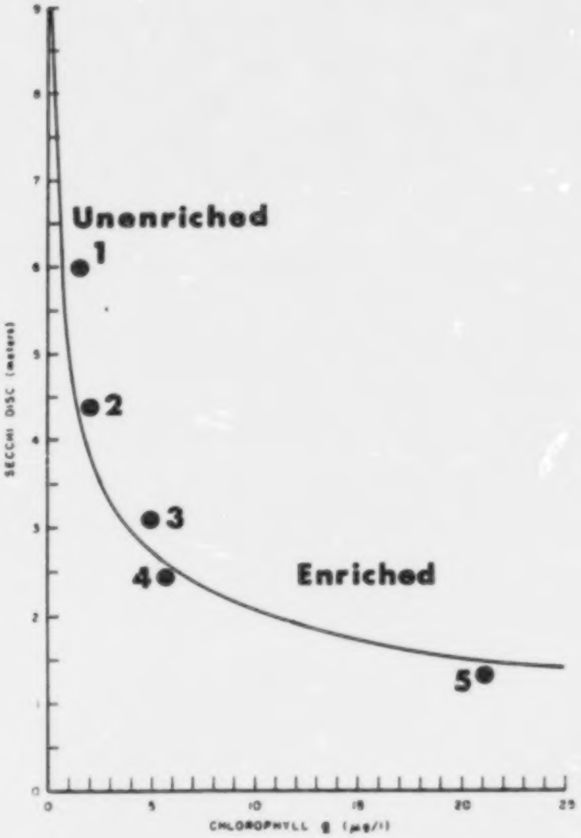
Insufficiant sampling was done on Crown Lake in 1983 to make any meaningful conclusions regarding water quality.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Crown Lake in 1983

Station	1	
Year	S.D	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979		
1980		
1981		
1982		
1983	5.25*	1.8*

*Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982

We hope that sampling is done in 1984 with increased sampling frequency.

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Crystal Lake
Galway Township
Peterborough County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Crystal Lake in 1983

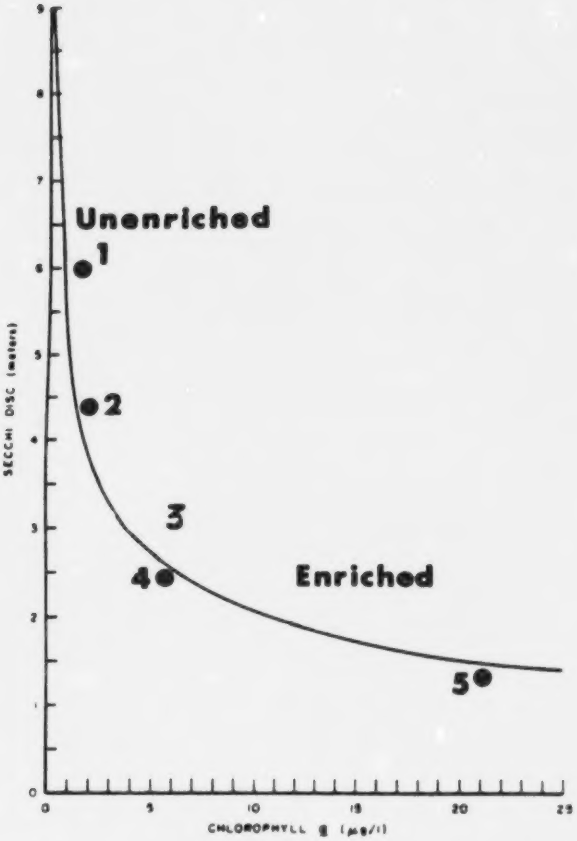
Station	1		2		3		4	
	Clear Bay		Upper Black Bay		Lower Black Bay		N/W Chanel	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
June 12	6.5	14.5	5.0	2.6	4.5	2.0	4.0	2.8
June 26	5.5	10.6	6.0	3.2	6.0	2.3	5.5	3.2
	6.0	12.6	5.5	2.9	5.3	2.2	4.8	3.0

Insufficient sampling was done to allow meaningful conclusions to be reached. It is suggested that the sampling effort be concentrated in fewer locations and that at least six samples per location are taken throughout the ice-free period of the year.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Crystal Lake from 1977 to 1983

Station	A		B		C		D	
	Upper Black Bay		Clear Bay		Gull Rock		Leonards Island	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971								
1972								
1973								
1974								
1975								
1976								
1977	4.5	- -	4.3	- -	5.1*	- -	4.2	- -
1978	5.4	2.7	4.8	3.1	5.4	4.0	3.8	3.6
1979	5.4	2.3	5.2	3.6	4.8	2.1	4.8	2.2
1980	- -	- -	- -	- -	- -	- -	- -	- -
1981	5.0	3.5	4.4	3.2	4.6	3.0	4.5	3.0
1982	Insufficient	sampling						
1983	"	"						

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982

If participation in the sampling program is to be continued the sampling frequency must be increased.

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Davis Lake

Lutterworth Twp.
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Davis Lake in 1983

Station	1.Deep Bay		2.Deep Bay		East Bay		Narrows	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
June 12	3.0	2.0	3.0	2.3	-	-	-	-
July 25	4.5	3.5	4.5	4.2	-	-	-	-
Aug.1	-	-	4.5	3.4	4.5	1.6	-	-
Aug.14	4.5	2.4	4.5	2.6	-	-	-	-
Aug.21	4.75	3.4	4.5	2.3	-	-	-	-
Aug.28	4.5	2.0	-	-	-	-	4.5	2.3
Sept.5	4.5	2.1	-	-	-	-	4.5	2.9
	4.3	2.6	4.2	3.0	4.5	1.6	4.5	2.6

In 1983, insufficient sampling was done in the East Bay and the narrows to make any reliable conclusions regarding water quality. In the two Deep Bay stations the degree of water transparency was moderately high and moderate densities of suspended algae were present.

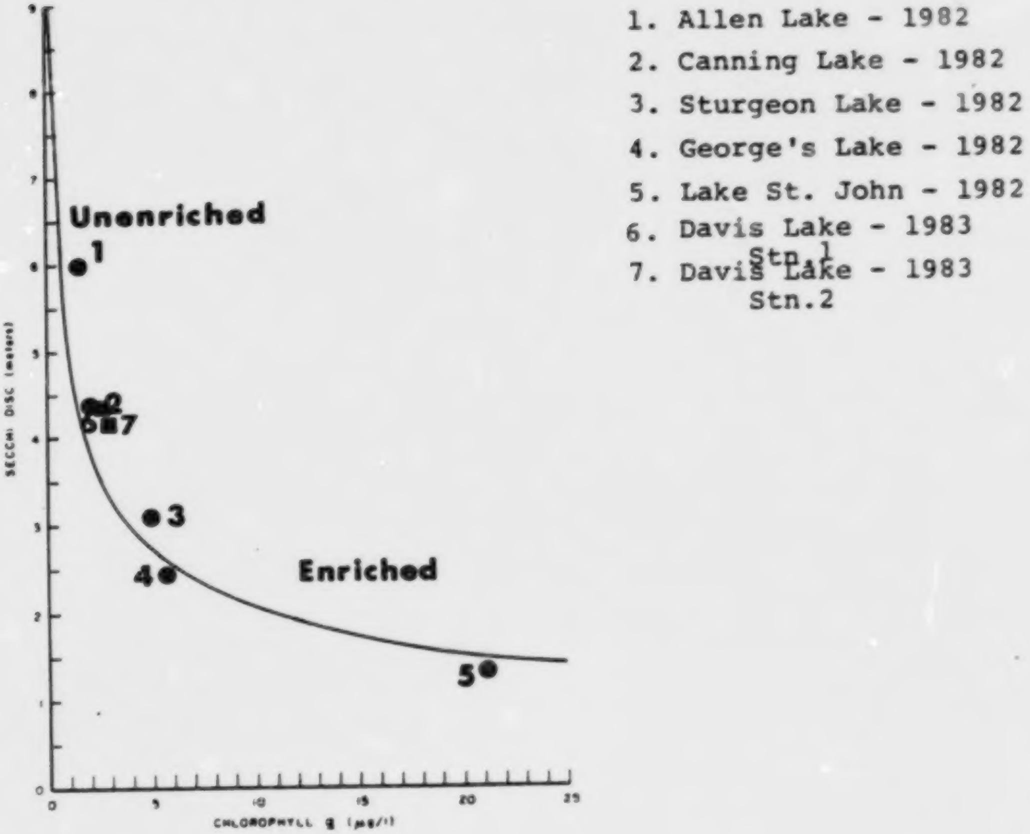
Based on the seasonal averages Davis Lake would be considered moderately enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Davis Lake from 1972 to 1983

Station	1.Deep Bay		2. Deep Bay	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972	4.6	1.9		
1973	4.9*	3.7*		
1974	3.6*	1.4*		
1975	3.8	3.9		
1976	4.9*	2.2*		
1977	4.3*	- -		
1978	- -	- -		
1979	- -	- -		
1980	- -	- -		
1981	- -	- -	4.0*	1.9*
1982	4.3*	1.9*	4.3*	1.7*
1983	4.3	2.6	4.2*	3.0*

* Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Davis Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Davis Lake - 1983 Stn.1
7. Davis Lake - 1983 Stn.2

Since 1972, average Secchi disc readings have not changed significantly ranging from 3.6 to 4.9 m. Average chlorophyll a concentrations have fluctuated more from year to year ranging from 1.4 to 3.9 ug/L.

In general, there has been no noticeable change in water quality for the period of record. Water quality of Davis Lake continues to be very good for recreational use. We hope that participation in this program continues and we recommend that the sampling effort be concentrated on one or two stations.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Doeskin (Doe) Lake

Muskoka Ward

Town of Gravenhurst

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Doeskin Lake in 1983

Station	Lake Centre	
Date	S.D.	Chl.a
June 12	1.3	1.3
June 19	1.25	2.5
July 3	1.33	2.1
July 17	1.2	2.6
July 24	NG	1.0
Aug.14	1.5	3.6
	1.3	2.2

In 1983, the Secchi disc readings ranged from 1.2 to 1.5 m and chlorophyll a concentrations ranged from 1.0 to 3.6 ug/L. The densities of suspended algae observed in 1983 were considerably lower than concentrations observed in previous years.

Based on the seasonal averages in 1983, Doeskin Lake would be considered moderately enriched althrough previous information (Table 2) would indicate that the lake is enriched.

NG - not given

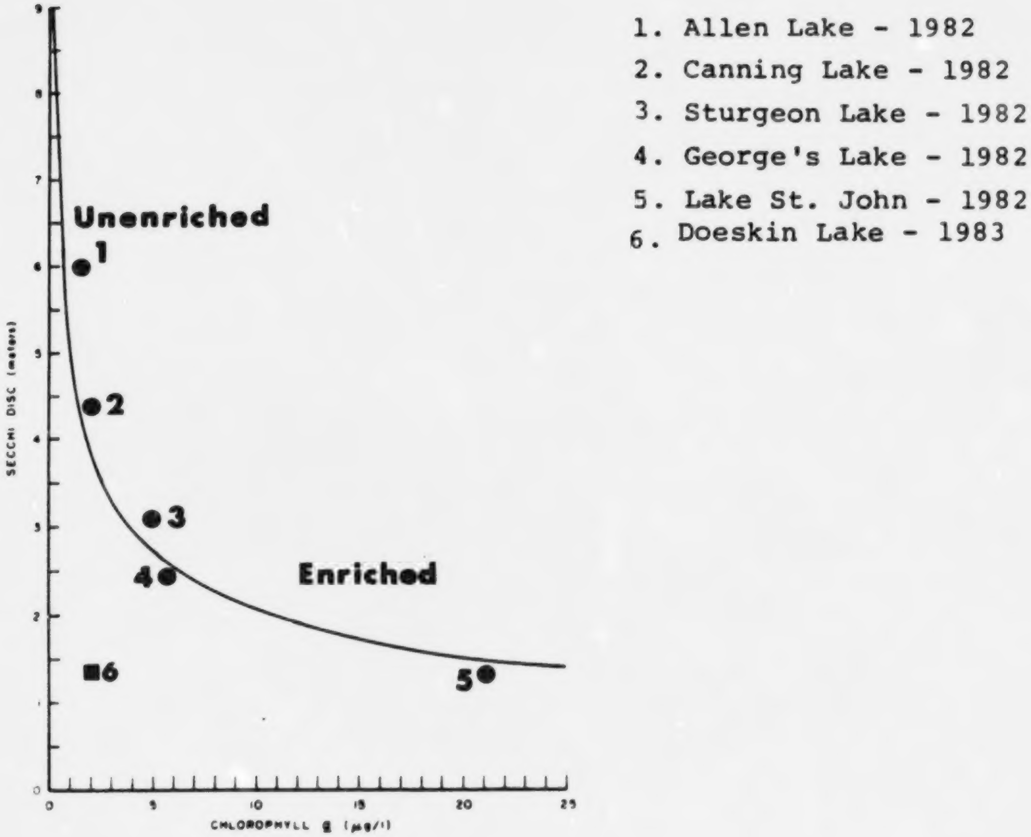
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Doeskin Lake from 1978 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978	1.2	4.5
1979	- -	11.0*
1980	1.3	7.0
1981	1.3	5.5
1982	1.2	5.6
1983	1.3(2.0**)	2.2(2.3**)

* Based on less than 6 samples

** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Doeskin Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1978, average Secchi disc readings have not changed significantly while average chlorophyll a concentrations have ranged from 2.2 to 11.0 ug/L. The amount of fluctuation in densities of suspended algae is the result of periodic algae blooms.

We hope your enthusiastic participation in this program continues in 1984.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Dummer Lake
Dummer Township
Peterborough County

TABLE 1: **Secchi Disc (m) and chlorophyll a (ug/L) data collected from** Dummer Lake in 1983

Station	South End	
Date	S.D.	Chl.a
May 23	3.5	3.2
June 05	4.6	1.1
June 19	4.5	3.3
July 3	4.2	3.0
July 10	3.5	3.6
Aug. 1	4.0	2.7
Aug. 7	4.0	4.7
Aug. 21	4.0	2.1
Sept.5	4.5	1.5
Sept.25	4.0	3.9
Oct. 10	4.5	1.3
	4.1	2.7

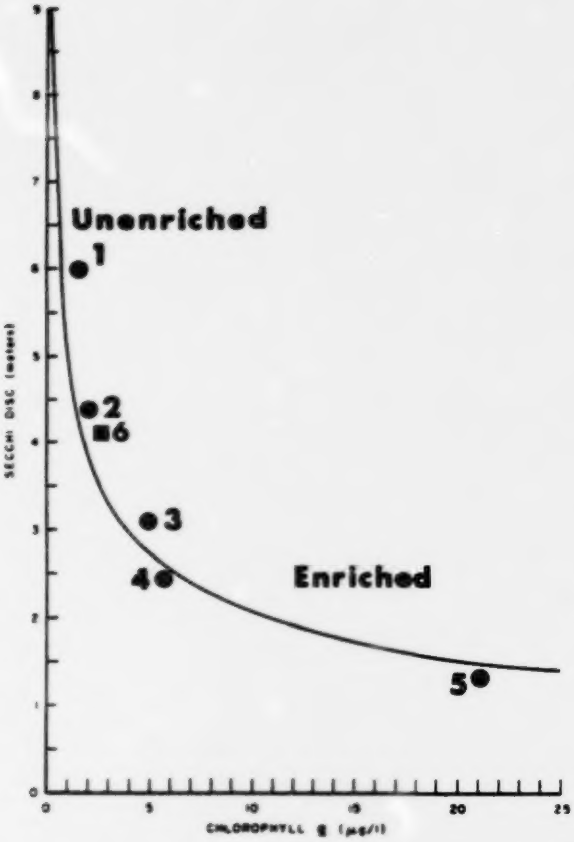
Based on the 1983 mean Secchi disc and chlorophyll a concentration Dummer Lake was considered moderately enriched with moderately low algal densities and moderately good water clarity.

TABLE 2: **Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from** Dummer Lake from 1978 to 1983

Station	1- South End	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978	3.2(*3.8)	2.8(*3.9)
1979	3.2	3.7
1980	3.1	3.5
1981	3.7	3.8
1982	3.7	4.1
1983	4.1	2.7

* Mean values from MOE/7 Links Water Quality Survey 1978.

Figure 1: The relationship between Secchi disc and chlorophyll a for Dummer Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Dummer Lake - 1983

A slight improvement in the enrichment status of the lake was evident in the 1983 results as compared to previous years. Continued participation is recommended to confirm any long term trends.

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East Lake

Harcourt Township

County of Haliburton

TABLE 1: Seechi Disc (m) and chlorophyll a (ug/L) data collected from East Lake in 1983

Station	West End	
Date	S.D.	Chl.a
June 11	4.6	2.4
June 19	4.6	4.1
June 26	4.6	2.7
July 3	4.6	2.7
July 10	4.6	1.2
July 17	4.6	2.6
Aug.1	4.6	3.0
Aug.14	4.6	2.2
Aug.19	5.6	2.7
Sept.5	5.6	1.8
	4.8	2.5

An excellent sampling program was conducted in 1983. The Secchi disc readings were relatively constant ranging from 4.6 to 5.6m. The chlorophyll a concentrations ranged from 1.2 to 4.1 ug/L.

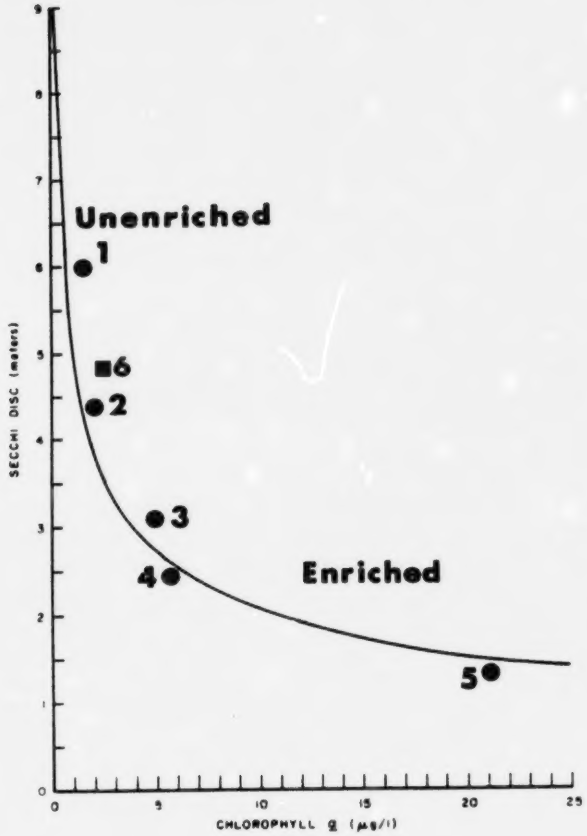
Based on the seasonal averages East Lake would be considered moderately enriched with a moderately high degree of water transparency and moderately low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from East Lake from 1971 to 1983

Station	Main	
Year	S.D.	Chl.a
1971	4.3	2.7
1972	- -	- -
1973	5.0*	1.9*
1974	3.6	1.5
1975	4.2	2.2
1976	4.2	2.3
1977	4.2	- -
1978	4.6	2.3
1979	4.6	2.7
1980	4.6	2.8
1981	3.7	2.8
1982	5.7	6.6
1983	4.8	2.5

* Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for East Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. East Lake - 1983

Since 1971, eleven years of reliable seasonal average data have been collected on East Lake. In that period, average Secchi disc readings have not changed significantly ranging from 3.6 to 5.7 m. average chlorophyll a concentrations have not changed significantly except for the high concentrations observed in 1982 as the result of an algae bloom. For the remainder of the period, concentrations have ranged from 1.5 to 2.8 ug/L.

Congratulations on an excellent program.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Farlain Lake

Tiny Township
Simcoe County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Farlain Lake in 1983

Station Date	Main S.D.	Chl.a
June 19		1.4

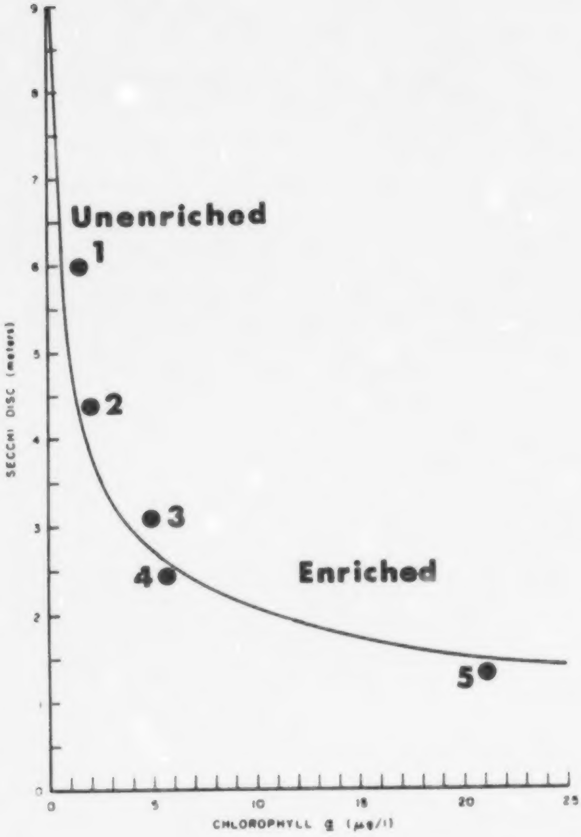
Insufficient samples were taken to allow meaningful conclusions to be reached. It is recommended that at least six samples be taken throughout the ice-free period to provide sufficient results. On most dates it appears that the Secchi disc measurement will be on bottom for Farlain Lake, even at the deepest point in the lake. It is still desireable to know this and to know what changes, if any, in algal density are taking place.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Farlain Lake from 1973 to 1983

Station Year	Main S.D.	Chl.a
1971		
1972		
1973	3.9*	2.2*
1974		
1975		
1976		
1977		
1978	3.7	2.3
1979	G4.0	1.7
1980	G4.0	2.2
1981	- -	1.4*
1982	G4.0	2.2

G - Secchi disc on bottom, true reading higher than noted
* MOE data
** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982

Continued participation in the program is encouraged but with increased sampling frequency.

For additional copies of this report, please contact:

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Fawn (Deer) Lake

Macaulay & Stephenson Wards
Town of Bracebridge
District Municipality of Muskoka.

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Fawn Lake in 1983

Station	Several		
Date	S.D.	Chl.a	
June 19	1.0	1.2	(Location 1)
June 19	1.5	1.6	(Location 2)
July 3	1.2	4.2	(Opp. Lot 27, con.1)
July 3	1.0	4.8	(East End)
July 25	1.0	AD	(Opp. Lot 23 & 24)
July 25	1.0	21.6	(Entrance to Creek)
Aug. 7	1.1	5.0	(Opp. Lots 11 & 12)
Aug. 7	1.2	5.0	(Opp. Lot 5)
Aug. 7	1.4	2.1	(off beach)
Aug. 7	1.1	3.4	(Mouth of Creek)
Aug. 21*	NG	1596.0	(Lot 27 Plan BR 530)
Aug. 21	1.4	1.5	(Middle East of Lake)
Aug. 21	1.4	1.3	(Centre of Lake)

AD - anomalous data withdrawn at lab.
* sample contained large mass of filamentous algae.

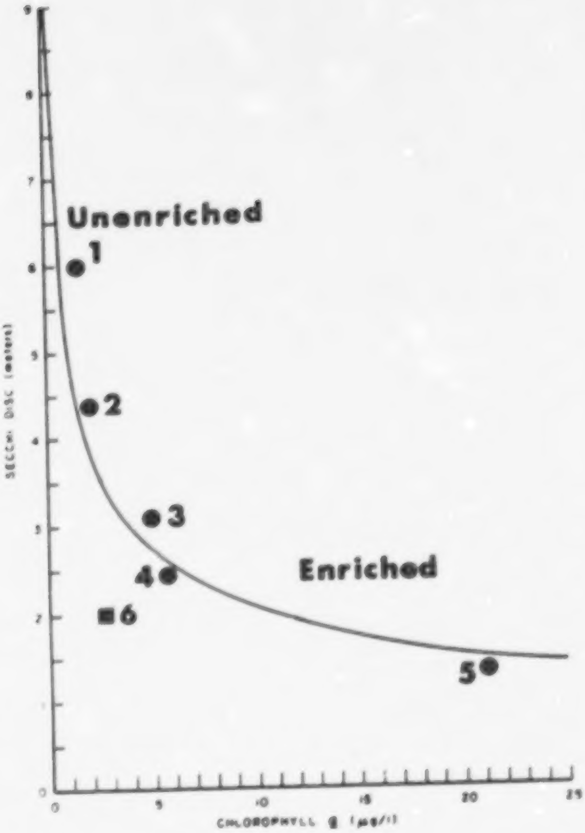
This data has been presented for your information only, since samples were all taken at different locations we cannot obtain seasonal averages. In general the degree of water transparency was low. Most chlorophyll samples were not taken through a depth of twice the Secchi depth, therefore, concentrations were lower than they should have been. We recommend that 1 station be chosen and this should be sampled at least six times during the cottage season, otherwise the results obtained will continue to be of little value.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Fawn Lake in 1983

Station	Several	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979		
1980		
1981		
1982		
1983	- -(2.0*)	- -(2.6*)

* MOE

Figure 1: The relationship between Secchi disc and chlorophyll a for Fawn Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Fawn Lake - 1983 (MOE)

The results of a 1983 MOE survey on Fawn Lake indicated a low degree of water transparency with Secchi disc readings ranging from 1.5 to 2.5 m. There was a very noticeable brown colour in the water as the result of dissolved peat or humic substances from the drainage basin. This has significantly reduced water transparency. Densities of suspended algae were moderately low with chlorophyll concentrations ranging from 1.3 to 4.0 ug/L.

Based on the seasonal averages Fawn Lake would be considered moderately enriched.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

George's Lake
Harcourt Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from George's Lake in 1983

Station	Main	
Date	S.D.	Chl.a
June 6	2.5	4.6
June 19	2.5	4.8
July 3	2.0	3.1
July 10	2.5	2.2
July 17	2.5	3.7
July 24	2.5	7.4
Aug.1	2.75	8.0
Aug.7	2.50	5.5
Aug.21	3.0	7.3
	2.5	5.2

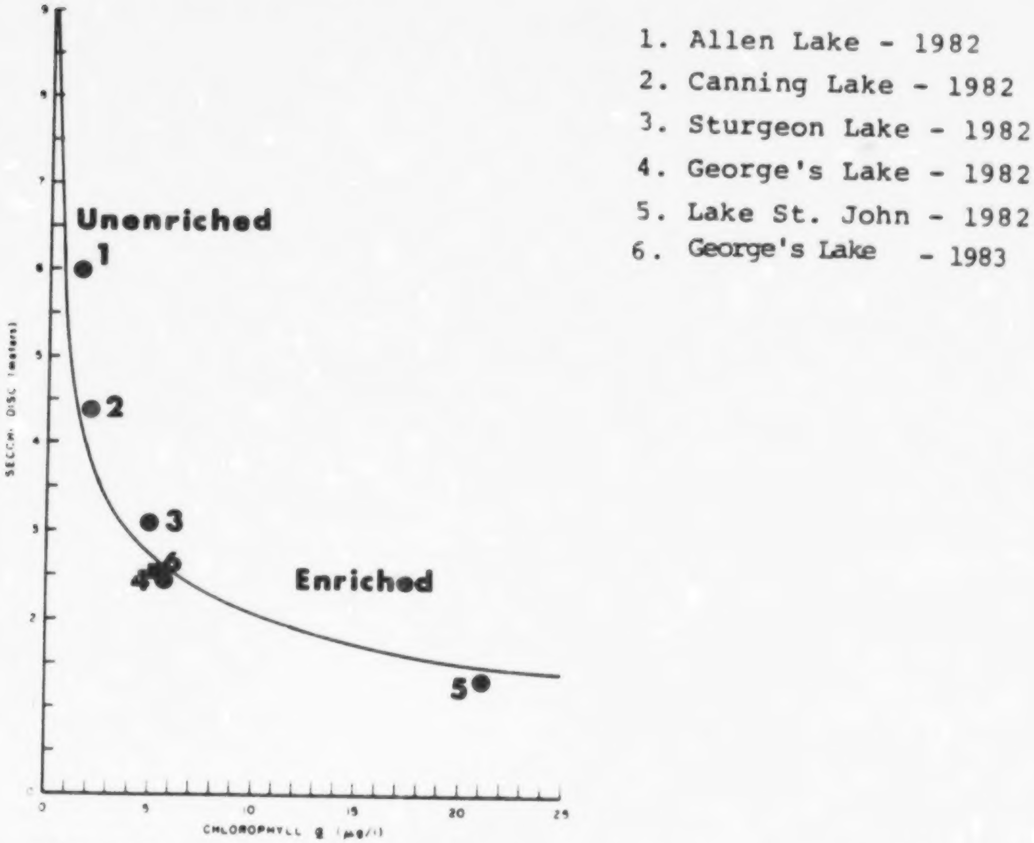
An excellent sampling program was conducted on George's Lake in 1983. The degree of water transparency was moderately low throughout the sampling period with Secchi disc readings ranging from 2.0 to 3.0 m. The densities of suspended algae were highest during late July and August with chlorophyll a concentrations ranging from 2.2 to 8.0 ug/L. Based on the seasonal averages, George's Lake would be considered enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from George's Lake from 1973 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972		
1973	2.2*	5.8*
1974	2.3	3.0
1975	2.5	10.2
1976	2.6	7.2
1977	2.8	- -
1978	2.6	10.3
1979	2.5	10.7
1980	1.8	12.1
1981	1.9	9.1
1982	2.5	6.0
1983	2.5	5.2

* Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for George's Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1973, the degree of water transparency in George's Lake has not changed significantly with average Secchi disc readings ranging from 1.8 to 2.8 m. There has been more variation in densities of suspended algae with average chlorophyll a concentrations ranging from 3.0 ug/L in 1974 to 12.1 ug/L in 1980. This is not unusual for an enriched lake since periodic algae blooms can increase the seasonal average chlorophyll a concentration substantially.

We hope that your enthusiastic participation in this program continues.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Go Home Lake

Gibson Ward
Township of Georgian Bay

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Go Home Lake in 1983

Station	A (North)		B (South)	
Date	S.D.	Chl.a	S.D.	Chl.a
May 12	3.0	0.7	3.3	0.8
May 22	3.2	1.3	3.1	1.7
June 1	3.1	1.5	3.5	1.2
June 22	3.5	1.6	5.0	1.3
July 7	4.0	3.9	4.0	1.5
July 17	3.5	1.4	4.5	1.2
Sept.9	5.0	1.0	5.0	1.2
Sept.28	4.1	1.4	4.0	1.3
Oct.25	4.5	1.6	4.0	1.7
	3.8	1.6	4.0	1.3

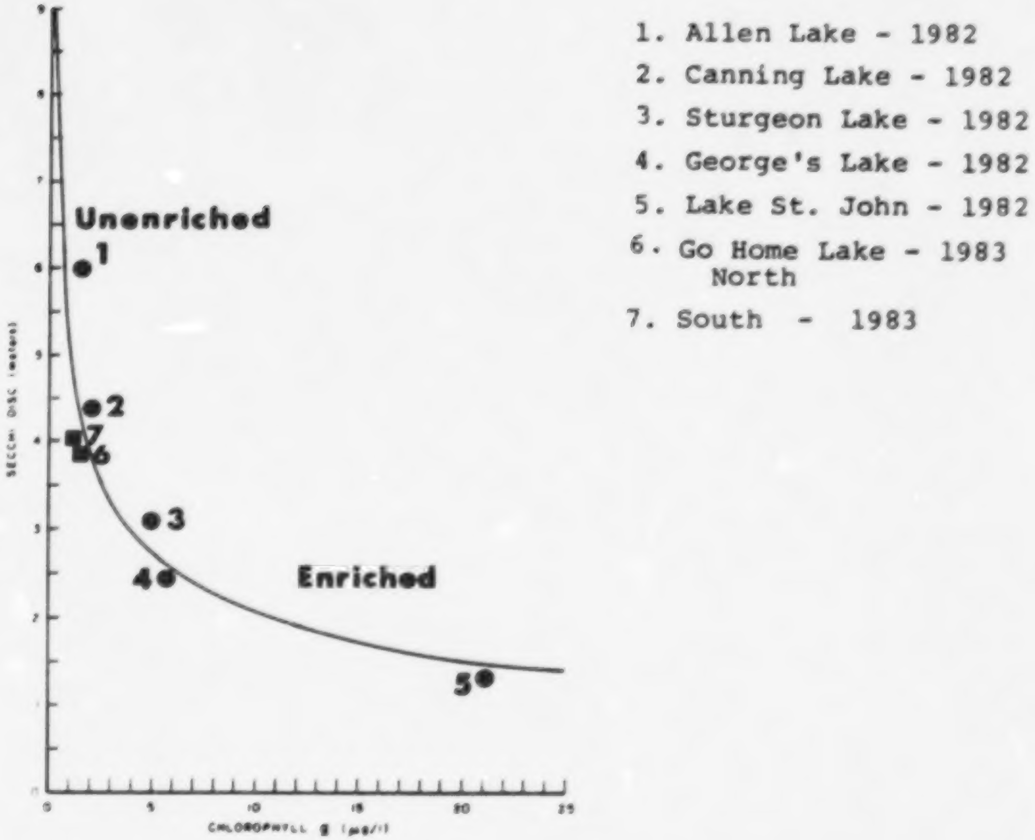
An excellent sampling program was conducted on Go Home Lake in 1983. The degree of water transparency was moderately high and the densities of suspended algae were low at both stations. A 1983 MOE survey indicated a higher average Secchi disc reading probably due to a difference in sampling method. Based on the seasonal averages, Go Home Lake would be considered borderline between moderately enriched and unenriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Go Home Lake from 1971 to 1983

Station	A (North)		B (South)	
Year	S.D.	Chl.a	S.D.	Chl.a
1971	3.6	1.4		
1972				
1973				
1974				
1975				
1976	5.6	1.9	5.4	2.3
1977	6.2	- -	5.1*	- -
1978	- -	- -	- -	- -
1979	4.6	2.6	4.8	3.2*
1980	- -	- -	- -	- -
1981	4.8*	1.3*	4.7*	1.8*
1982	4.5	1.3	4.6	1.2
1983	3.8	1.6	4.0(6.1**)	1.3(1.2**)

* Based on less than 6 samples
** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Go Home Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1971, seven years of data have been collected on Go Home Lake This information indicated that the average Secchi disc readings in the north basin have ranged from 3.6 to 6.2 m and average chlorophyll a concentrations have ranged from 1.3 to 2.6 ug/L In the south basin average Secchi disc readings have ranged from 4.0 to 6.1 m and average chlorophyll a concentrations have ranged from 1.2 to 3.2 ug/L.

In general, there is no overall trend to indicate a change in water quality since 1971, water quality continues to be very good for recreational use.

We hope the enthusiatic participation in this program continues.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Gull Lake

Muskoka Ward
Town of Gravenhurst

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Gull Lake in 1983

Station	Lower Gull		Upper Gull	
Date	S.D.	Chl.a	S.D.	Chl.a
May 28	4.3	1.7	3.3	1.7
June 25	3.8	2.2	4.1	1.8
July 10	4.3	AD	5.0	1.0
July 24	3.5	1.3	4.0	1.2
Aug.07	4.0	1.4	4.8	1.2
Aug.14	3.5	1.8	3.5	2.0
Aug.28	3.2	1.6	2.8	1.6
Sept.11	2.5	AD	2.7	1.6
	3.6	1.7	3.8	1.5

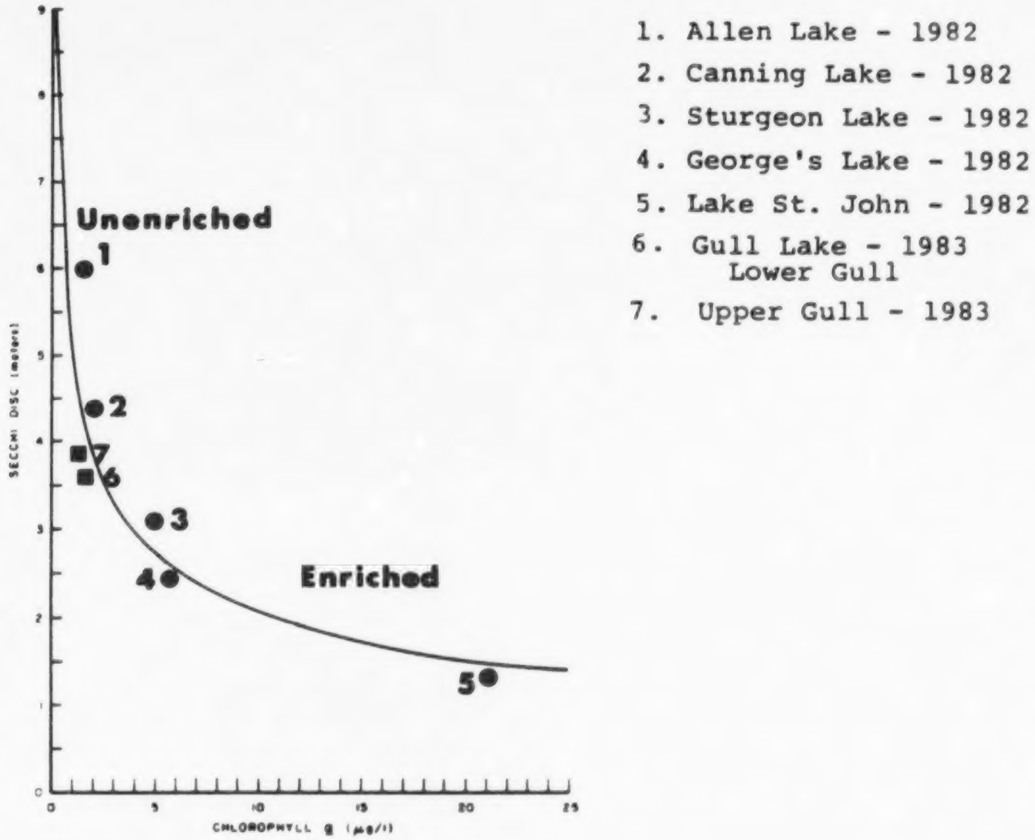
AD-anomalous data withdrawn at lab.
An excellent sampling program was conducted on Gull Lake in 1983. The degree of water transparency was moderately high at both stations. A 1983 MOE survey of Gull Lake indicated a higher average Secchi disc reading probably due to a difference in sampling method. The densities of suspended algae were low throughout the sampling period. Based on seasonal averages Gull Lake would be considered borderline between moderately enriched and unenriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected fromGull Lake from 1975 to 1983

Station	Lower		Upper	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973				
1974				
1975			5.0**	2.4**
1976				
1977				
1978				
1979				
1980				
1981				
1982	3.6*	2.4*		
1983	3.6	1.7	3.8(5.2**)	1.5(1.5**)

* Based on less than 6 samples
** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Gull Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



The results of the 1975 MOE survey of Gull Lake compare favourably to 1983 MOE results indicating the degree of water transparency remained high and densities of suspended algae remained low. The results of the Self-Help program from 1982 and 1983 indicated no change in water quality. Water quality in Gull Lake continues to be good for recreational use.

We hope that your enthusiastic participation in this program continues.

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Haliburton Lake

Harburn Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Haliburton Lake in 1983

Station	Main North End		South Bay	
Date	S.D.	Chl.a	S.D.	Chl.a
May 23	6.0	1.8	2.75	5.0
May 29	6.0	1.8	3.0	4.7
June 6	6.5	1.4	3.25	3.8
June 13	5.5	1.3	3.5	2.4
June 19	- -	- -	4.0	3.0
June 29	5.25	1.1	3.75	1.9
July 3	7.0	2.7	4.75	1.8
July 10	6.0	2.8	4.2	4.5
July 24	- -	- -	4.1	3.0
Aug.3	6.0	1.4	4.25	2.5
Aug.7	6.0	1.7	4.0	3.6
Aug.14	6.0	2.6	4.0	4.6
Sept.5	5.5	2.2	4.1	5.6
	6.0	1.9	3.8	3.6

Once again an excellent sampling program was conducted on Haliburton Lake.

In the main body of the lake, Secchi disc readings ranged from 5.25 to 7.0 m and average chlorophyll a concentrations ranged from 1.1 to 2.8 ug/L.

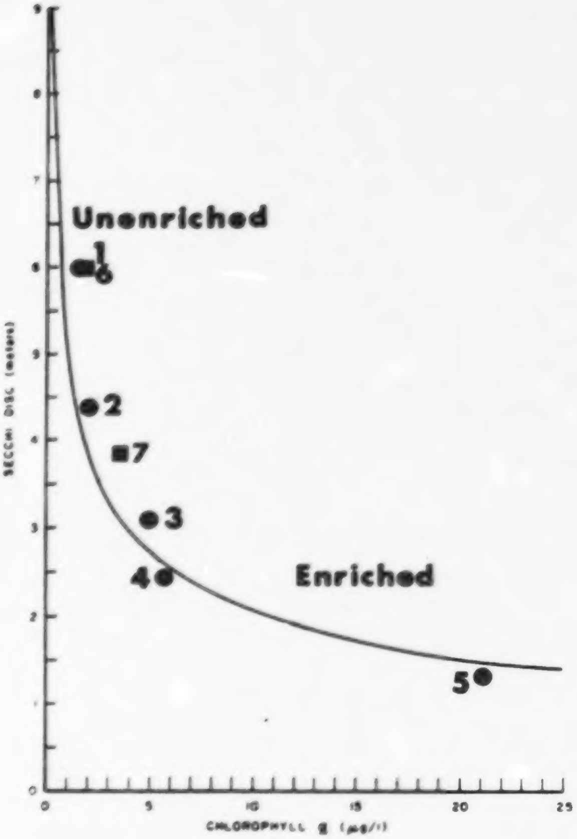
Based on the seasonal averages the main body of Haliburton Lake would be considered unenriched. In South Bay, Secchi disc readings ranged from 2.75 to 4.75 m and chlorophyll a concentrations ranged from 1.8 to 5.0 ug/L. Based on the seasonal averages South Bay would be considered moderately enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Haliburton Lake from 1972 to 1983

Station	Main-North End		South Bay	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972	6.3*	1.0*	3.5*	2.7*
1973	6.0	1.8	- -	- -
1974	6.7	1.1	3.8	2.4
1975	6.4	2.5	3.6	3.3
1976	6.0	1.7	4.0	4.7
1977	7.6(6.4*)	- -	4.3(3.6*)	- -
1978	7.3	1.9	4.2	3.2
1979	6.5	3.4	4.1	5.3
1980	6.5**	2.9**	3.4	5.9
1981	6.8	1.6	4.6	3.6
1982	6.3	2.1	3.8	4.3
1983	6.0	1.9	3.8	3.6

* MOE data
** Based on less than 6 samples.

Figure 1: The relationship between Secchi disc and chlorophyll a for Haliburton Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Haliburton Lake - 1983
   Main North End
7. South Bay - 1983

Since 1972, twelve years of seasonal average data have been collected from Haliburton Lake. In the main body of the Lake, average Secchi disc readings have not changed significantly ranging from 6.0 to 7.6 m. Average chlorophyll a concentrations have ranged from 1.0 to 3.4 ug/L. Water quality in the main part of the lake remains excellent for recreational use. In South Bay, average Secchi disc readings have ranged from 3.4 to 4.6 m and average chlorophyll a concentration have fluctuated more ranging from 2.4 to 5.9 ug/L. There has been no major change in water quality in South Bay. It continues to be good for recreational use but subject to periodically higher densities of suspended algae.

Congratulations on an excellent sampling program.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Halls Lake

Stanhope Township

County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Halls Lake in 1983

Station	North Central		North End		East End		South		North-West	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
July 4	8.0	0.8	- -	- -	- -	- -	- -	- -	- -	- -
July 17	- -	- -	9.5	0.6	10.0	0.5	- -	- -	- -	- -
Aug.1	- -	- -	- -	- -	- -	- -	4.0	?0.8	- -	- -
Aug.1	- -	- -	- -	- -	- -	- -	4.0	?0.7	- -	- -
Aug.14	- -	- -	- -	- -	- -	- -	- -	- -	10.0	0.8

?chlorophyll sample taken 0 to 20m so Secchi disc reading could be 10.0 m but was given as 4.0 m. Insufficient sampling was done at any station to obtain reliable seasonal average information, however, a 1983 MOE survey in the centre of the lake indicated that Halls Lake had a high degree of water transparency and low densities of suspended algae (Table 2).

We suggest that this program could be improved if one station only was sampled six times during the cottage season.

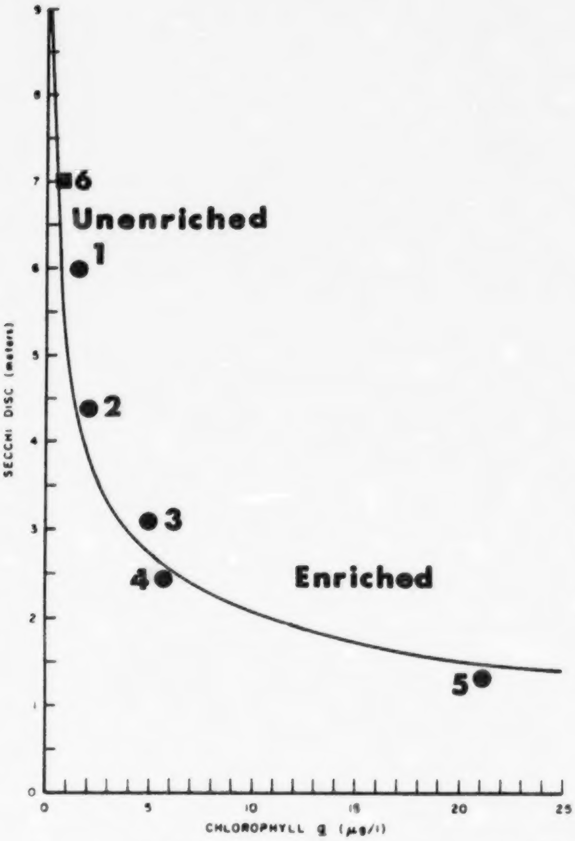
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Halls Lake from 1972 to 1981 & 1983

Station	1	
Year	S.D.	Chl.a
1971		
1972	8.7	0.7
1973	7.8	0.7
1974	7.5	0.4
1975	8.4	0.6
1976	7.5	1.1
1977	8.5	- -
1978	8.6	0.9
1979	7.8**	1.5**
1980	7.0**	1.2**
1981	- -	- -
1982	- -	- -
1983	- -(7.0*)	- -(0.7*)

* MOE data

** based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Halls Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Halls Lake - 1983
   (MOE)

Since 1972, there are 8 years of reliable seasonal average information available on Halls Lake. These results indicate a consistently high degree of water transparency and low densities of suspended algae. Water quality of Hall's Lake remains excellent for recreational use.

We hope that participation in this program continues in 1984.

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Harp Lake
Chaffey Ward
Town of Huntsville
District Municipality of Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Harp Lake in 1983

Station	Centre	
Date	S.D.	Chl.a
June 24	4.0	SB
July 3	4.8	2.0*
July 17	4.5	1.2*
July 20	4.6	1.6*
Aug.1	4.3	2.8
Aug.28	5.2	2.5
	4.6	2.0

SB - sample broken in transit
* Chlorophyll results unreliable since sample was more than 48 hours old at time of analysis.

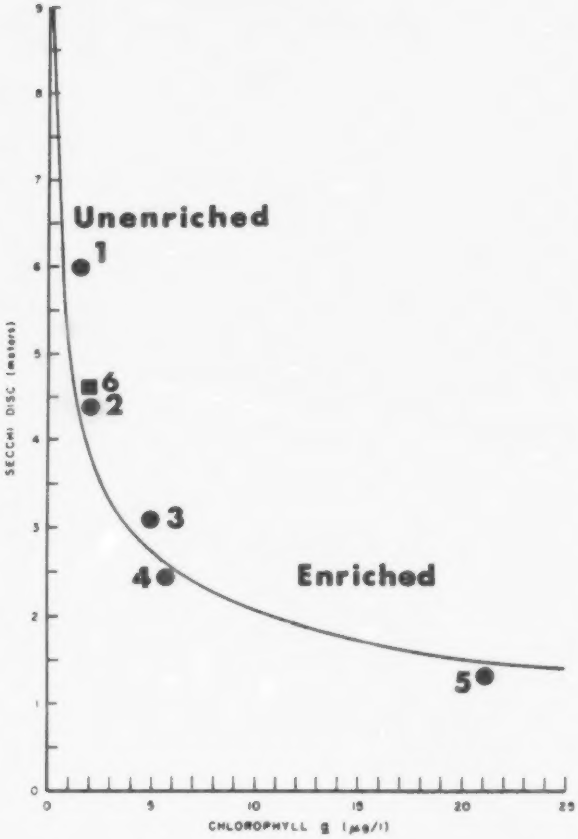
In 1983, Secchi disc readings ranged from 4.0 to 5.2 m and chlorophyll a concentrations ranged from 1.2 to 2.8 ug/L. We recommend that chlorophyll samples be delivered to the lab as soon as possible since concentrations can change considerably if sample is more than 48 hours old. Based on the information available Harp Lake would be considered moderately enriched with a moderately high degree of water transparency and moderately low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Harp Lake from 1972 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972		
1973	4.0(4.4*)	3.7(2.8*)
1974	3.7(3.7*)	2.1(2.1*)
1975	5.0(4.9*)	3.3(3.3*)
1976	4.5**	2.5**
1977	4.8	- -
1978	4.5	1.9
1979	4.6**	2.8**
1980	4.1	3.1
1981	4.5**	2.9**
1982	4.1**	3.0**
1983	4.6	2.0**

* MOE data
** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Harp Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Harp Lake - 1983

Since 1973, water quality of Harp Lake has not changed significantly. It remains very good for recreational use.

Average Secchi disc reading have ranged from 3.7 to 5.0 m and average cholorophyll a concentrations have ranged from 1.9 to 3.7 ug/L.

We hope that participation in this program continues in 1984.

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Head Lake

Laxton & Digby Twps.
Victoria County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Head Lake in 1983

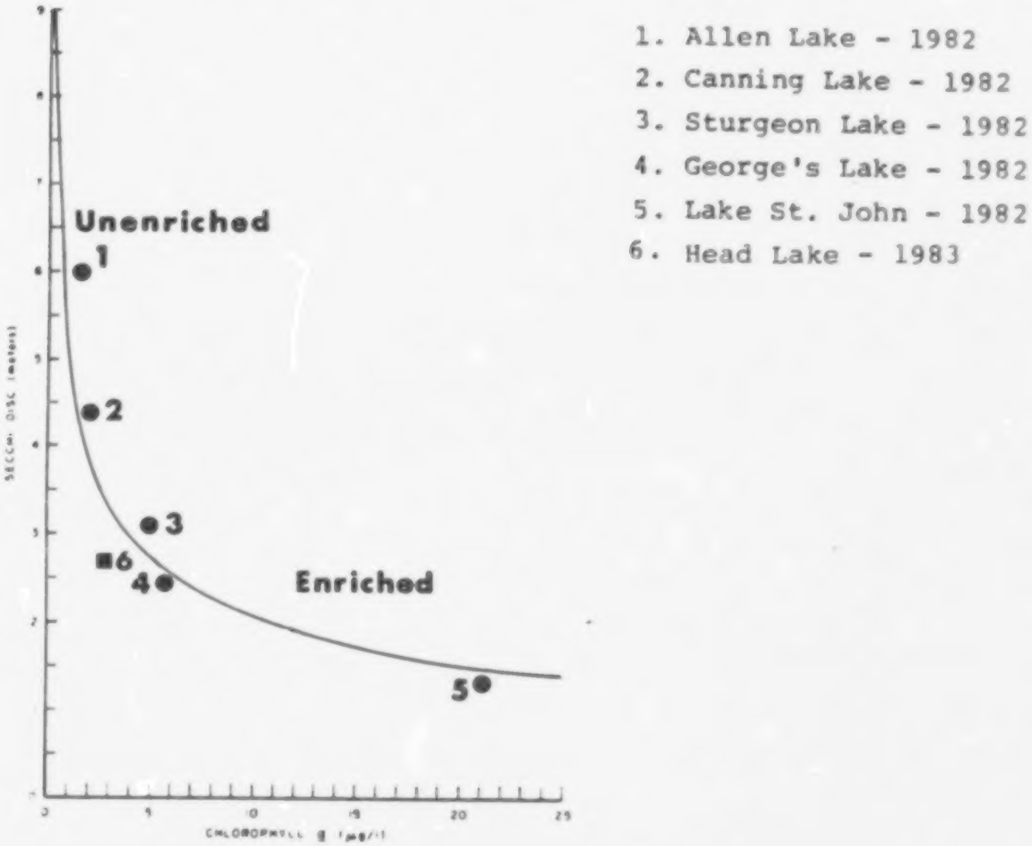
Station	Main (East)	
Date	S.D.	Chl.a
May 23	2.5	3.1
May 29	2.5	1.8
June 5	3.0	1.2
June 12	3.5	1.0
June 19	3.5	1.0
June 26	2.75	- -
July 3	3.0	2.2
July 10	2.5	1.8
July 18	2.75	2.7
July 24	2.0	5.1
Aug. 1	4.5	3.0
Aug. 7	2.0	2.7
Aug. 21	2.0	3.4
Aug. 29	2.25	3.9
Aug. 15	2.0	3.2
Sept. 5	2.0	2.4
	2.7	2.5

Another excellent sampling program was undertake during 1983. Based on the results in Table 1 Head Lake was considered moderately enriched with moderate algal densities and a moderate degree of water clarity.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Head Lake from 1972 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972	3.2	2.8
1973	2.9	3.0
1974	2.8	2.0
1975	2.8	2.7
1976	3.0	2.9
1977	3.3	- -
1978	2.9	2.5
1979	3.2	2.5
1980	3.3	2.7
1981	2.8	2.5
1982	2.8	2.8
1983	2.7	2.5

Figure 1: The relationship between Secchi disc and chlorophyll a for Head Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



The 1983 mean values are very close to the long term average of SD 3.0 m and Chl.a 2.6 ug/L. Congratulations are again in order for continued hard work. Continued participation in the program is encouraged.

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Healey Lake

Macaulay Township

Town of Bracebridge

District Municipality of
Muskoka.

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Healey Lake in 1983

Station	South (Gypsy)		North (Baltic Bay)	
Date	S.D.	Chl.a	S.D.	Chl.a
June 11	1.25?	1.5?	1.13?	2.1?
July 12	(3.0)	(4.3)	(4.0)	(3.6)
Aug.2	1.0	2.1	1.25	2.2
Sept.13	2.0?	3.6?	- -	- -

? station location not given

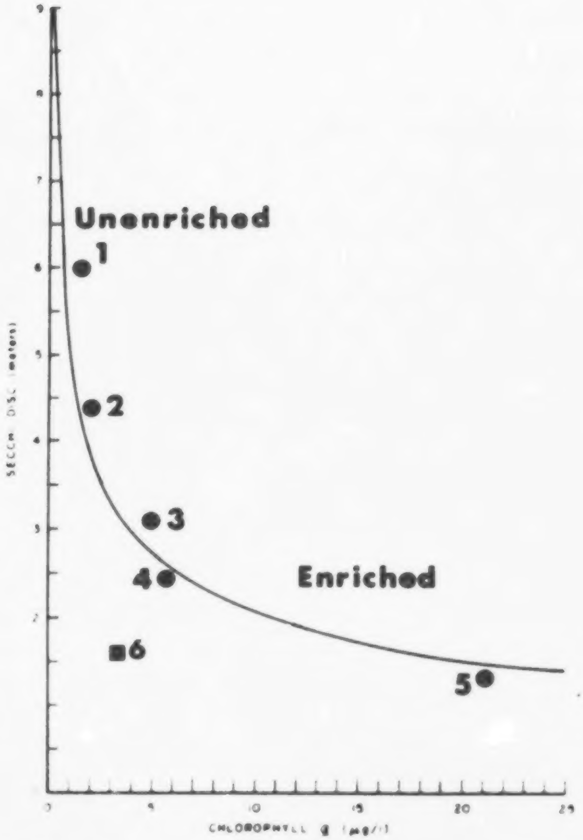
In 1983, it appears that samples were taken at different locations on each sampling date, therefore, we are unable to make any reliable conclusions about water quality. We recommend that one station be sampled at least six times during the cottage season.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Healey Lake in 1983

Station	1		2	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973				
1974				
1975				
1976				
1977				
1978				
1979				
1980				
1981	1.6**	3.3**		
1982	- -	- -		
1983	- -	- -		

** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Healey Lake in 1981 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Healey Lake - 1981 (MOE)

Results of a 1981 MOE survey on Healey Lake indicated a low degree of water transparency and moderately high densities of suspended algae. There was also a very noticeable brown colour in the water presumably due to dissolved peat or hunic material from the drainage basin. This reduced the water transparency somewhat.

Based on this information Healey Lake would be considered moderately enriched.

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Horseshoe (Elsie) Lake

Minden Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Horseshoe Lake in 1983

Station	North Side	
Date	S.D.	Chl.a
June 12	4.25	2.0
June 26	4.0	0.9
July 3	5.5	1.6
July 14	5.7	0.9
July 24	6.0	1.5
Aug. 7	6.0	1.7
Aug. 21	5.8	1.6
Sept.5	5.2	1.9
	5.3	1.5

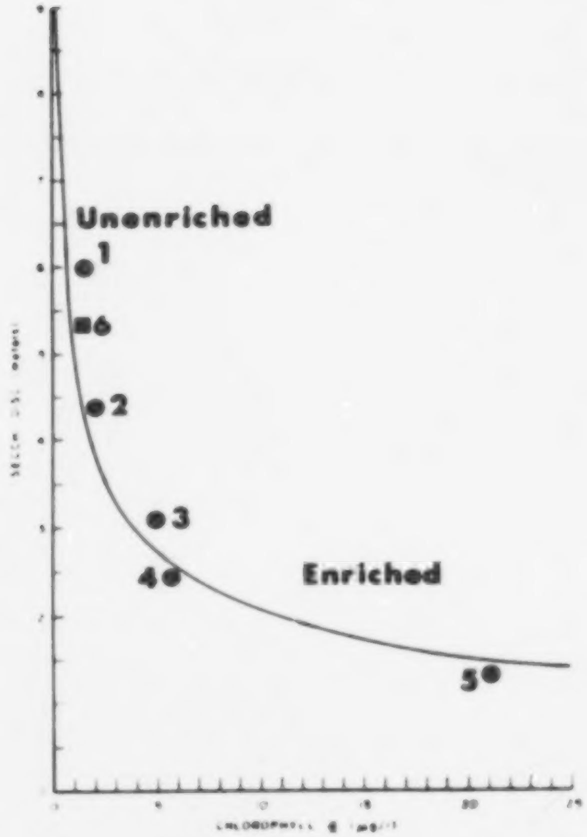
An excellent sampling program was conducted on Horseshoe Lake in 1983. Secchi disc readings ranged from 4.0 to 6.0 m and chlorophyll a concentrations ranged from 09 to 2.0 ug/L.

Based on the seasonal averages, Horseshoe Lake would be considered unenriched, characterized by a high degree of water transparency and low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Horseshoe Lake from 1973 to 1983

Station	North Side	
Year	S.D.	Chl.a
1971		
1972		
1973	5.3	2.3
1974	4.6	0.9
1975	6.8	3.7
1976	6.6	2.4
1977	6.7	- -
1978	- -	- -
1979	- -	- -
1980	- -	- -
1981	- -	- -
1982	4.4	1.8
1983	5.3	1.5

Figure 1: The relationship between Secchi disc and chlorophyll a for Horseshoe Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Horseshoe Lake - 1983

Since 1973, seven years of reliable seasonal average data have been collected. Water quality continues to be very good for recreational use.

Average Secchi disc readings have ranged from 4.4 to 6.8 m and average chlorophyll a concentrations have ranged from 0.9 to 3.7 ug/L. No overall trends in water quality have been observed.

We hope that your enthusiastic participation in this program continues in 1984.

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Jack Lake

Burleigh & Methuen Twps.
Peterborough County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Jack Lake in 1983

Station	Sharp's Bay		Brook's Bay	
Date	S.D.	Chl.a	S.D.	Chl.a
Aug.6	3.3	0.7	4.0	1.4
Aug.8	4.1	4.1	4.5	2.6
	3.7	2.4	4.2	2.0

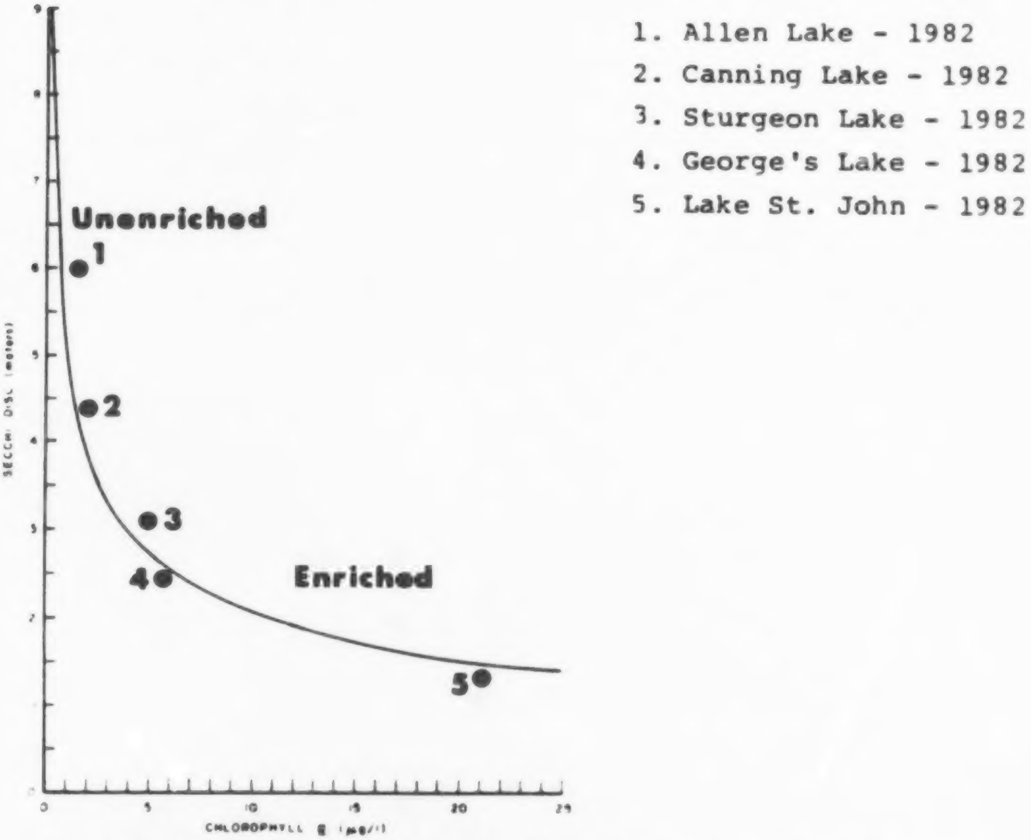
Insufficient samples were taken to allow meaningful conclusions to be reached. It is recommended that at least six samples be taken throughout the ice free period in order to get a reliable seasonal mean value.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Jack Lake from 1971 to 1983

Station	Sharp's Bay		Brook's Bay	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972			3.9	2.6
1973				
1974	4.4	1.4	3.4	1.9
1975				
1976	4.5	2.9	3.4	3.7
1977	4.7		3.5	
1978	4.7(5.2*)	2.6(2.6*)	3.3(3.8*)	3.9(3.4*)
1979	5.2	2.6	3.8	3.4
1980	4.9	3.1	3.4	5.3
1981	4.6	3.0	3.5	4.2
1982	5.0	3.0	3.6	6.3
1983	Insufficient Sampling			

* Mean values from MOE/7 Links Water Quality Survey

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



If participation in this program is to be continued, the sampling frequency must be increased.

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Kahshe Lake

Morrison Ward

Town of Gravenhurst

District of Municipality
of Muskoka.

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Kahshe Lake in 1983

Station	Kluey's Bay		Main Channel	
Date	S.D.	Chl.a	S.D.	Chl.a
June 19	2.6	3.1	2.6	3.0
July 3	1.75	3.3	1.75	2.5
July 17	1.75	2.2	-	-
Aug 14	2.75?	3.5?	-	-
Sept 5	3.0 ?	2.4?	-	-
Sept 24	2.5	1.5	-	-
	2.4	2.7	2.2**	2.8**

?Station location not given.

In 1983, the Secchi disc readings in Kluey's Bay ranged from 1.75 to 3.0 m and chlorophyll a concentrations ranged from 1.5 to 3.5 ug/L. Insufficient sampling was done in the main channel to obtain a reliable seasonal mean, however, a MOE survey at that location in 1983 indicated that there was an average Secchi disc reading of 3.6 m and an average chlorophyll a concentration of 4.3 ug/L. Based on this information Kahshe Lake would be considered borderline between moderately enriched and enriched. The noticeable natural brown colour of the water has reduced the water transparency of Kahshe Lake.

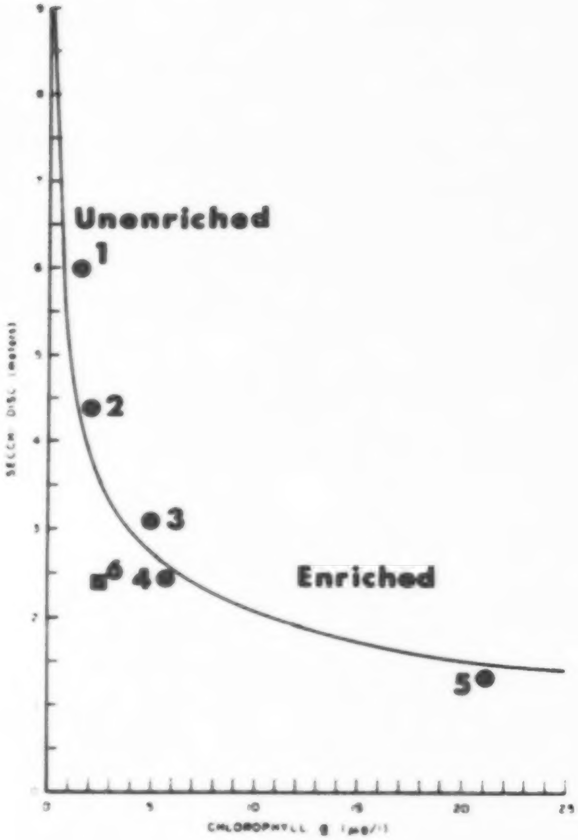
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Kahshe Lake from 1971 to 1983

Station	24 (L1) 1977-1980 Kluey's Bay 1983		26 (D1) 1977-1980 Main 1971, 1983	
Year	S.D.	Chl.a	S.D.	Chl.a
1971			3.1*	2.8*
1972				
1973				
1974				
1975				
1976				
1977	3.2**	- -	3.5**	- -
1978				
1979	3.2**	5.2**	3.4**	5.1**
1980	2.5**	4.4**	2.6**	4.1**
1981				
1982				
1983	2.4	2.7	2.2**(3.6*)	2.8**(4.3*)

* MOE

** based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Kahshe Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Kahshe Lake - 1983

The water quality of Kahshe Lake has not changed significantly since 1971 although chlorophyll a concentrations have increased from 2.8 ug/L in 1971 to 4.3 ug/L in 1983. This is within the natural fluctuation often observed in moderately enriched lakes. It is difficult to include 1977 to 1980 results since sampling was done at different stations than in 1971 and 1983. The moderately low degree of water transparency in Kahshe Lake is due in part to the brown staining of the water as a result of peat or humic substances in the watershed. We recommend that participation in this program be continued in order to obtain a long-term record of water quality in Kahshe Lake.

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Kashagawigamog Lake

Dysart & Minden Twp.
County of Haliburton

TABLE 1: Seecchi Disc (m) and chlorophyll a (ug/L) data collected from Kashagawigamog Lake in 1983

Station	South	
Date	S.D.	Chl.a
July 3	3.1	3.1
July 10	3.1	3.1
July 17	2.7	2.7
July 24	2.7	4.0
Aug 1	3.4	1.7
Aug 21	3.1	1.2
Aug 28	3.7	1.2
Sept.5	3.1	1.1
	3.1	2.3

Once again, an excellent sampling program was done on Kashagawigamog Lake.

In 1983 the Secchi disc readings ranged from 2.7 to 3.7 m indicating a moderate degree of water transparency. The lake has a noticeable brown colour due to staining from peat compounds in the watershed. This reduces the water transparency somewhat. Densities of suspended algae were low with chlorophyll a concentrations ranged from 1.1 to 4.0 ug/L.

Based on this information Kashagawigamog Lake would be considered moderately enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Kashagawigamog Lake from 1972 to 1983

Station	South		North	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972	- -	- -	4.3	4.7
1973	4.5	1.7	4.6	2.0
1974	4.6	1.5	4.4	1.4
1975	5.2**	1.1**	4.9	1.7
1976	4.5**(5.4*)	1.3**(2.1*)	4.0(4.7*)	2.7(2.8*)
1977	5.6	- -	4.9	- -
1978	5.4	1.6	4.1	1.8
1979	4.9	2.3		
1980	4.6	3.2		
1981	3.8	3.5		
1982	3.4	2.6		
1983	3.1	2.3		

* MOE data
** Based on less than 6 samples

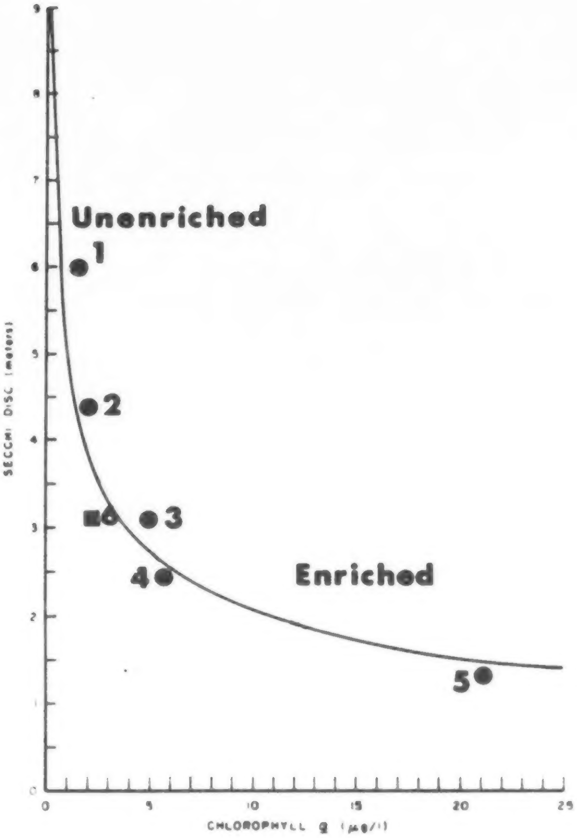

Figure 1: The relationship between Secchi disc and chlorophyll a for Kashagawigamog Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.

1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Kashagawigamog Lake - 1983

An excellent program has established a good long-term record of water quality in Kashagawigmog Lake. Water quality continues to be very good for recreational use.

Because of the lake's large drainage basin, water quality is affected mainly by the Drag River which flows into the lake at the north end and exits from the south. This factor should maintain a certain amount of stability in water quality. We do not anticipate any major water quality changes in Kashagawigamog Lake.

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Kasshabog Lake

Belmont & Methune Townships
Peterborough County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Kasshabog Lake in 1983

Station	Middle	
Date	S.D.	Chl.a
May 15	3.8	2.1
May 23	3.5	1.9
June 26	4.0	1.8
July 10	4.0	1.8
July 19	4.1	1.5
Aug. 7	5.0	1.4
Aug. 21	3.9	0.9
Aug. 31	5.0	1.0
Sept.5	5.2	- -
Sept.18	3.6	1.7
Oct. 4	4.7	- -
Oct. 10	4.5	1.8
	4.3	1.6

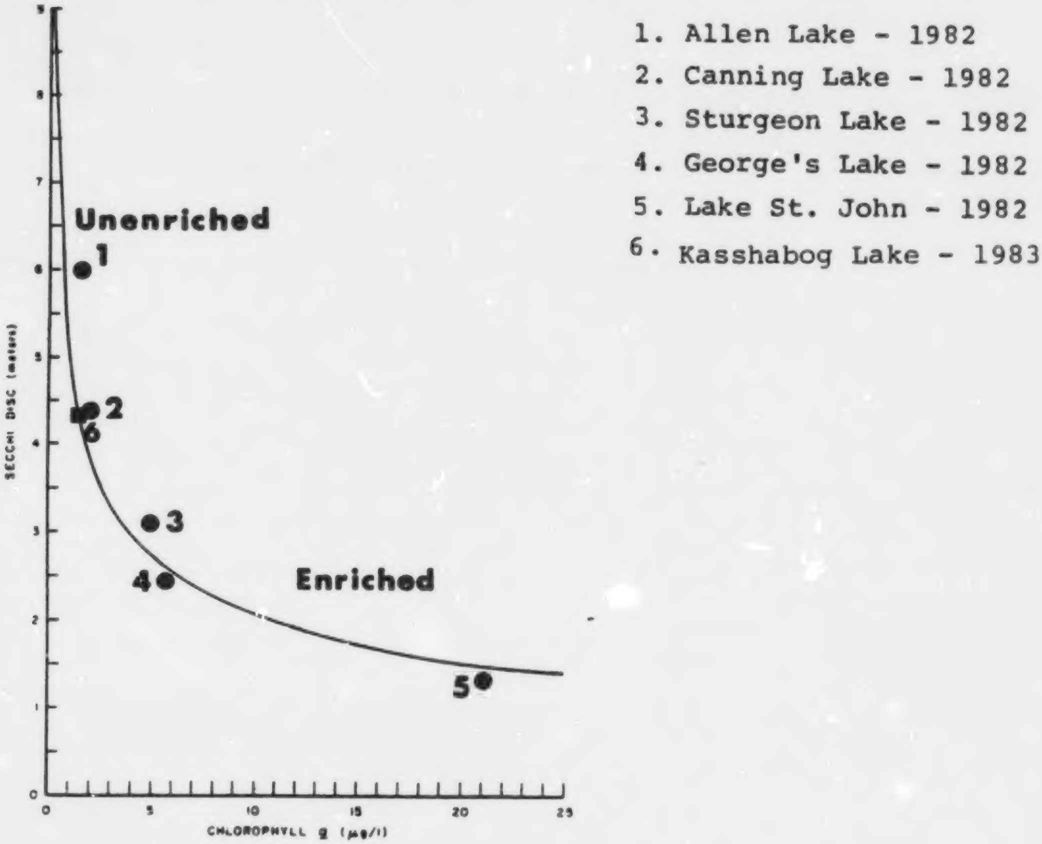
Based on the 1983 mean values for Secchi disc and chlorophyll a concentration Kasshabog Lake was considered unenriched with favourably low algal density and moderate water clarity.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Kasshabog Lake from 1978 to 1983

Station	Middle	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
* 1978	4.0	1.7
1979	- -	- -
1980	4.9	1.8
1981	4.4	2.5
1982	4.2	1.8
1983	4.3	1.6

* MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Kasshabog Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Based on the results in table 2, the year to year enrichement status of the lake continues to remain relatively stable. Continued participation in the sampling program is encouraged to confirm long-term trends.

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Kawagama Lake

Sherborne, Havelock,
Livingstone and McClintock
Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Kawagama Lake in 1983

Station	1 Minden Bay		2 Fish Pole Pt.		3 Long Is.		4 Fletcher Bay	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
June 5	7.0	0.8	8.0	0.7	- -	- -	- -	- -
June 19	7.0	0.8	11.0	0.3	- -	- -	- -	- -
July 3	- -	- -	- -	- -	9.25	0.4	7.0	0.9
July 4	6.0	1.1	11.0	0.5	- -	- -	- -	- -
July 17	6.5	1.3	11.0	0.6	- -	- -	- -	- -
Aug.1	5.0	1.2	10.0	1.2	- -	- -	- -	- -
Aug.5	- -	- -	- -	- -	12.5?	0.6?	- -	- -
Aug.28	- -	- -	- -	- -	13.0	AD	- -	- -
Sept.05	5.0	2.0	9.5	0.7	- -	- -	- -	- -
	6.1	1.2	10.1	0.7	11.6	0.5		

AD anomalous data withdrawn at lab.
? station location illegible.

In 1983, a good sampling program was conducted on stations 1+3 however insufficient sampling was done at stations 4 and 6.

Secchi disc readings were high at station 1 ranging from 5.8 to 7.0 m and chlorophyll a concentrations were low ranging from 6.8 to 2.0 ug/L. At station 3, Secchi disc readings were very high ranging from 8.0 to 11.0 m and chlorophyll a concentrations were very low, reading from 0.3 to 1.2 ug/L.

Based on the seasonal averages, Kawagama Lake would be considered unenriched with a higher degree of water transparency in the main body of the lake than in Minden Bay.

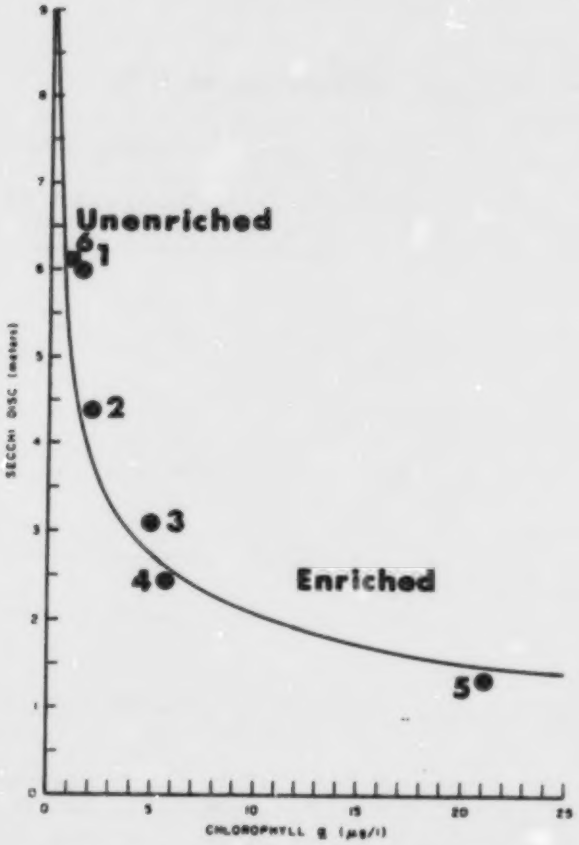
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Kawagama Lake from 1976 to 1983

Station	1		2		3		4	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971								
1972								
1973								
1974								
1975								
1976	4.5	2.5	9.6	1.0	10.1	1.0	7.1	1.4
1977	5.2	- -	8.6*	- -	9.4*	- -	7.1*	- -
1978	5.5	2.9	8.0*	0.7*	10.4*	0.7*	7.2*	1.4*
1979	5.0*	3.4*	9.3*	0.8*	8.3	1.2	6.2*	2.0*
1980	5.1*	2.3*	9.2	1.0	9.3*	0.7*	6.0*	2.3*
1981	5.4*	2.8*	9.9*	1.0*	9.3*	1.1*	6.6	1.5
1982	4.6	3.7	7.5	0.8	9.3	0.9	6.3	1.9
1983	6.1	1.2	10.1	0.7	11.6*	0.5*	7.0*	0.9*

* Based on less than 6 samples
1976 MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Kawagama Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.

■7



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Kawagama Lake - 1983
   Minden Bay
7. Kawagama Lake
   off Fish Pole Pt. - 1983

Since 1976, there have been no major changes in water quality in Kawagama Lake, however, in 1983, the degree of water transparency at stations 1 and 3 was higher than all previous years. At station 1, the average chlorophyll a concentrations were considerably lower in 1983 than previous year. The reason for this change is not yet apparent.

We hope that your participation in this program continues in 1984.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Kennaway Lake
Harcourt Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Kennaway Lake in 1983

Station Date	Main S.D.	Chl.a
May 23	3.0	(0.6*)
July 10	3.0	2.5
Aug.1	2.5	4.0
	2.8	3.3

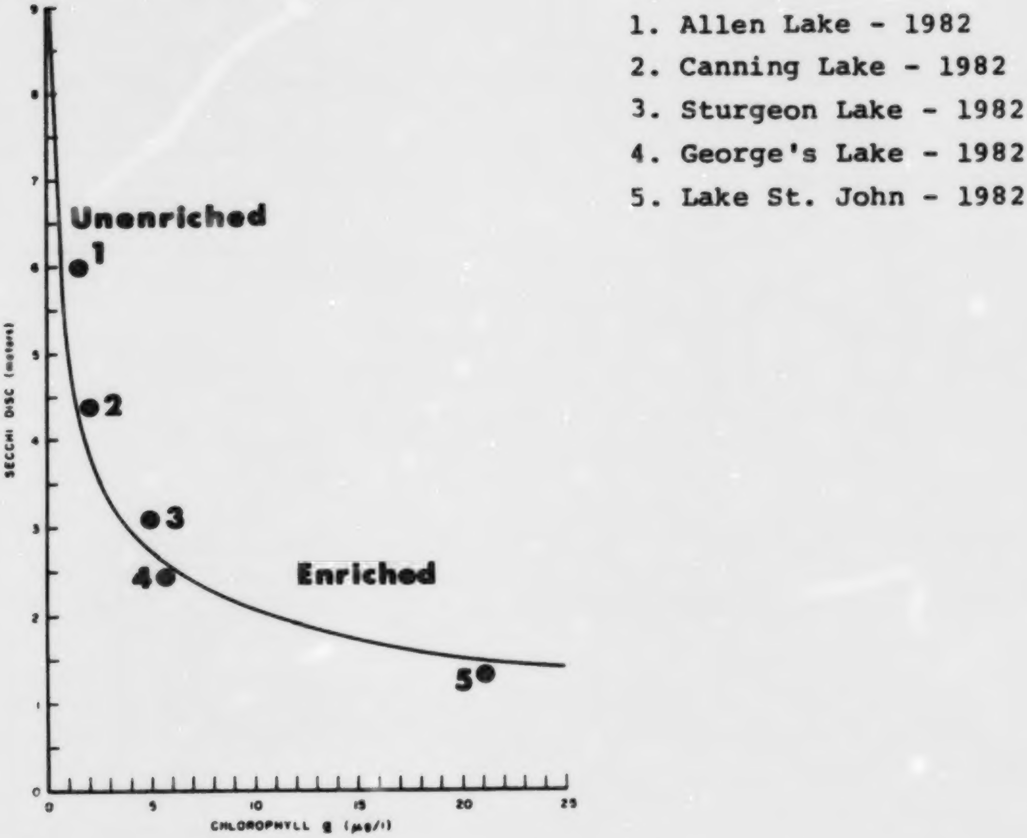
*Chlorophyll result unreliable due to long time (7days) period between sampling and analysis. Insufficient sampling was done in 1983 to obtain reliable seasonal average data.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Kennaway Lake from 1973 to 1983

Station Year	Main S.D.	Chl.a
1971		
1972		
1973	4.1	3.3
1974	3.6	1.9
1975	3.8	2.7
1976	4.2	3.8
1977	4.7(4.5*)	- -
1978	3.6	2.4
1979	4.3	2.4
1980	4.2	2.2
1981	- -	- -
1982	2.9**	3.2**
1983	2.8**	3.3**

* MOE data
** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



Since 1973 eight years of reliable seasonal average data have been collected. Those results indicate no significant change in water quality.

We recommend that six samples be taken throughout the cottage season if possible in order to obtain reliable information.

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Kennisis Lake

Havelock & Guilford Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Kennisis Lake in 1983

Station	A Big Kennisis		B Big Kennisis		C Big Kennisis	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
June 19	8.5	0.6	- -	- -	- -	- -
July 10	7.0	0.5	7.0	0.5	7.0	0.5

Insufficient sampling was done in 1983 for any reliable conclusions to be made regarding water quality.

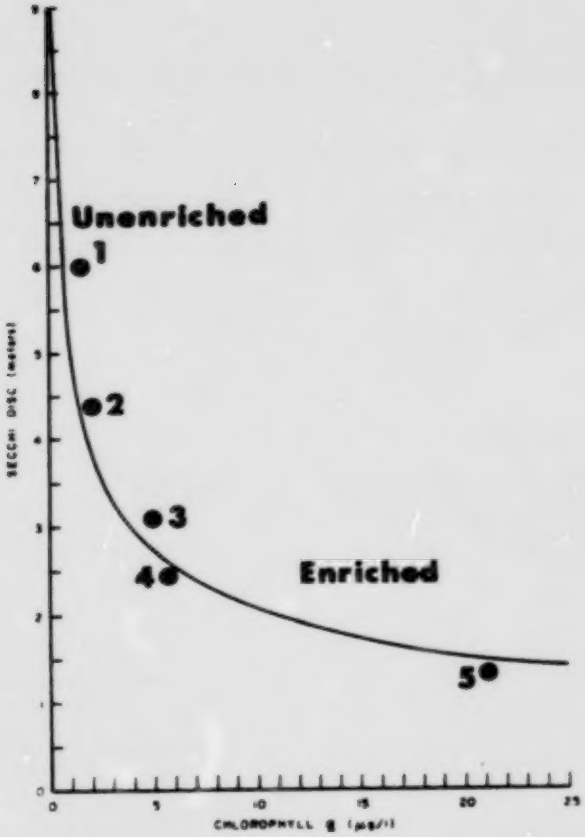
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Kennisis Lake from 1972 to 1983

Station	A		B		C	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971						
1972	6.7	1.0	9.0	0.9	8.8	0.9
1973	7.8	0.7	9.5	0.8	9.5	0.8
1974	7.7	0.8	8.6	0.5	- -	- -
1975	9.6	1.0	10.0	0.6	10.5	0.8
1976	8.2	**1.4	9.3	1.4	9.6	1.2
1977	9.4(9.2)	--	9.5	- -	9.6	- -
1978	9.3	1.0	9.8	1.0	9.6	1.0
1979	- -	- -	- -	- -	- -	- -
1980	7.5	0.8	8.2	0.8	7.4	0.9
1981	7.3*	0.8*	8.1*	0.6*	7.5*	1.0*
1982	7.6*	1.1*	8.0*	1.1*	7.9*	1.2*
1983	7.8*	0.6*	7.0*	0.5*	7.0*	0.5*

* Based on less than 6 samples

** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6.

We recommend increased sampling frequency if the program is to provide any meaningful results.

For additional copies of this report, please contact:

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Koshlong Lake
Glamorgan Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Koshlong Lake in 1983

Station	Central Basin	
Date	S.D.	Chl.a
July 24	4.5	2.5
July 12	4.5	4.3
July 28	6.5	2.5
Aug.24	5.8	2.3
Oct.24	4.0	2.8
Nov.24	4.7	1.9
	5.0	2.7

A good sampling program was conducted on Koshlong Lake in 1983. The Secchi disc readings ranged from 4.0 to 6.5 m and chlorophyll a concentrations ranged from 1.9 to 4.3 ug/L.

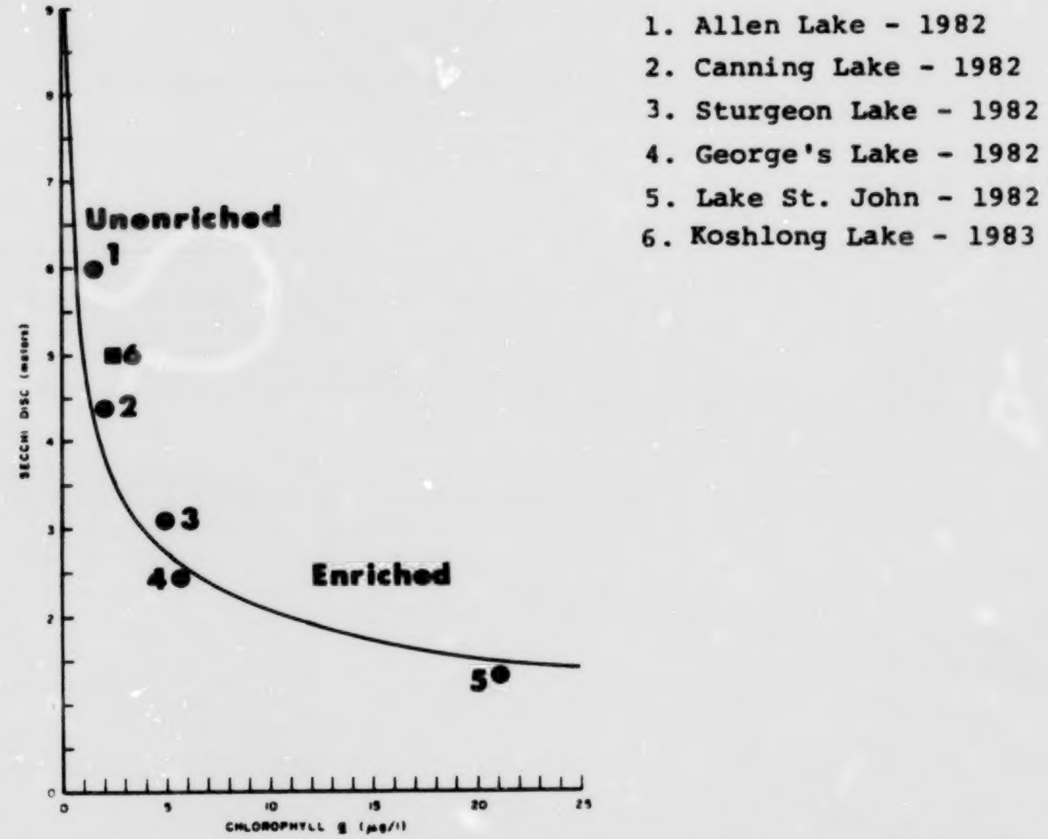
Based on the seasonal averages Koshlong Lake would be considered borderline between moderately enriched and unenriched, characterized by a high degree of water transparency and moderately low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Koshlong Lake from 1973 to 1983

Station	1	
Year	S.D.	Chl.a
1971		
1972		
1973	5.7	2.0
1974	5.4	1.3
1975	6.5	1.9
1976	5.7	2.2
1977	7.2	- -
1978	- -	- -
1979	4.1*	2.3*
1980	5.3*	2.1*
1981	- -	- -
1982	- -	- -
1983	5.0	2.7

* based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Koshlong Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



The 8 years of record for Koshlong Lake indicate that no major changes in water quality have occurred. Water quality continues to be very good for recreational use. Average Secchi disc readings have been high, ranging from 4.1 to 7.2 m. Average chlorophyll a concentrations have been moderately low, ranging from 1.3 to 2.7 ug/L.

We hope that participation in this program continues in 1984.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Lake of Bays

Township of Lake of Bays
District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Lake of Bays in 1983

Station	2 Trading Bay		5 E. Bigwin		6 Haystack Bay	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
July 18	8.0	0.7	8.0	0.7	8.0	0.8
Aug. 14	6.0	1.3	7.0	1.2	NG	1.4
	7.0	1.0	7.5	1.0		1.1

NG - not given

Insufficient sampling was done in 1983 to make any reliable conclusions regarding water quality.

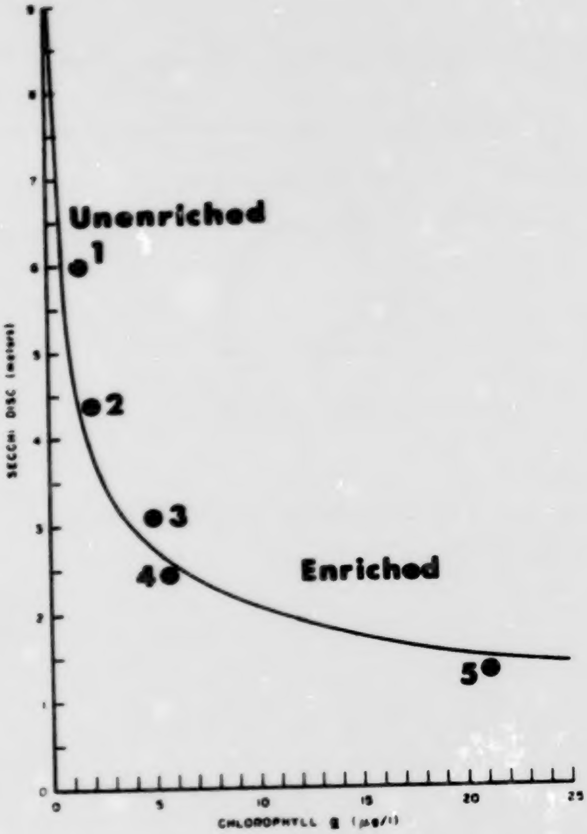
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Lake of Bays from 1977 to 1983

Station	2 Trading		5 East Bigwin		6 Haystack		7 Fairview		10 Gull Is.		12 Dwight	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971												
1972												
1973												
1974												
1975												
1976												
1977	7.5	- -	7.0	- -	6.3	- -	7.4	- -	6.1	- -	6.5	- -
1978	8.0*	1.3*	7.2	1.3	7.1	1.5	6.9	1.1	7.4	1.7	6.0	1.2
1978**	6.4	1.5	6.6	1.5	6.2	1.5	6.1	1.4	6.1	1.3	5.3	1.4
1979	6.2	1.7	6.6	1.6	6.3	2.0	6.4	1.3*	6.2	1.6	5.6	1.5
1980	7.2	1.4	7.2	1.4	7.0	1.4*	7.1	1.3	6.6	1.4	5.6	1.4
1981	5.5*	1.2*	5.5*	1.3*	6.3	1.1	6.0*	1.0*	5.3*	0.9*	5.5*	1.0*
1982	5.8*	1.5*	5.8*	1.3*	5.6*	1.2*	6.3*	1.3*	5.8*	1.1*	5.1*	1.2*
1983	7.0*	1.0*	7.5*	1.0*	8.0*	1.1*	6.3*	1.1*	6.0*	0.9*	5.5*	0.9*

* Based on less than 6 samples

** MOE survey

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6.

We recommend increased sampling frequency if this program is to produce any meaningful results.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Lake of Bays

Township of Lake of Bays

District Municipality of
Muskoka

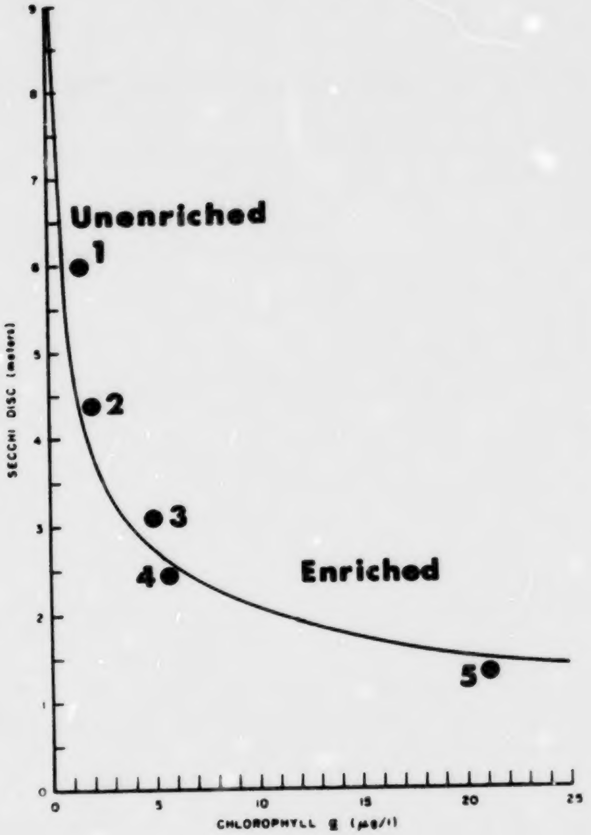
TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Lake of Bays in 1983

Station	7		10		12	
	Fairview Channel		Gull Is. Channel		Dwight Bay	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
July 18	7.0	0.7	6.0	0.7	6.0	0.7
Aug.14	5.5	1.4	6.0	1.0	5.0	1.0
	6.3	1.1	6.0	0.9	5.5	0.9

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from

Station Year
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6.

For additional copies of this report, please contact:

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Lake Joseph

Township of Muskoka Lakes

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Lake Joseph in 1983

Station	North Basin		Little L.Joseph		Badgerow Is.	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
Aug.3	7.5	0.9	4.5	2.1	7.0	1.0
Sept.4	- -	- -	6.0	0.7	0.9	0.6
			5.2	1.4	8.0	0.8

Insufficient sampling was done in 1983 for any reliable conclusions to be made from the data. We recommend that sampling be done at least six times during the ice-free period.

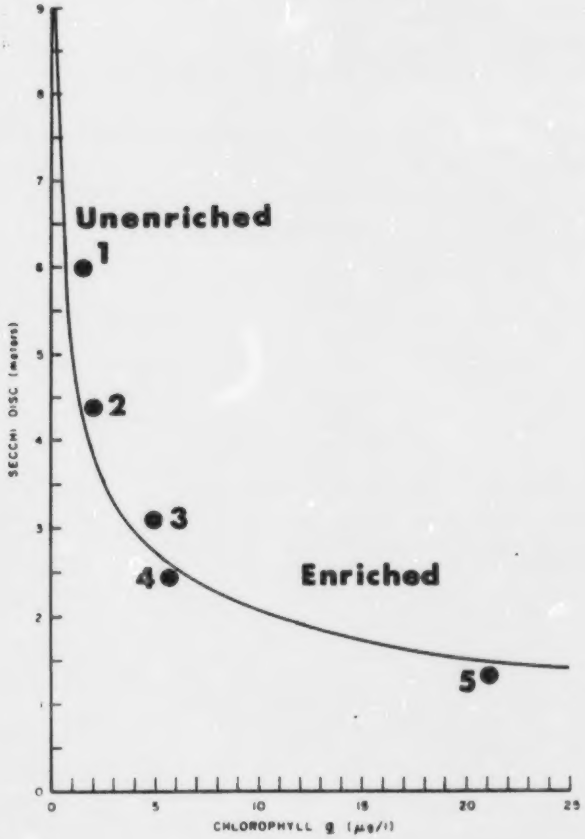
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Lake Joseph from 1969 to 1983

Station	North Basin		Little Lake Joseph		Badgerow Is.	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1969	8.1		5.8			
1970	8.2**	1.1**	5.8**	2.5**		
1971						
1972						
1973						
1974	7.0*	0.7*				
1975	- -	- -				
1976	8.2*	1.4*	6.2*	2.2*		
1977	8.3	- -	6.2	- -	- -	- -
1978	- -	- -	- -	- -	- -	- -
1979	- -	- -	- -	- -	- -	- -
1980	- -	- -	- -	- -	- -	- -
1981	6.6	1.6	4.9	1.8	6.9	1.8
1982	8.0*(9.1**)	0.8*(1.0**)	5.7*(6.4**)	2.3*(2.1**)	6.6*	0.8*
1983	7.5*	0.9*	5.2*	1.4*	8.0*	0.8*

* Based on less than 6 samples

** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6.

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TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Lake Joseph in 1983

Station	Yoho Is. A		Yoho Is B		Cox Bay	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
July 26	9.5	0.5	9.5	07	- -	- -
Aug. 3	9.5	NS	9.5	NS	6.0	LA
Aug.13	9.0	NS	8.5	NS	- -	- -
Aug.17	7.5	0.9	7.0	1.1	- -	- -
Aug.24	8.5	NS	8.5	NS	- -	- -
Sept.3	7.5	NS	8.0	NS	- -	- -
	8.6	0.7	8.5	0.9	- -	- -

NS no sample received
LA lab accident

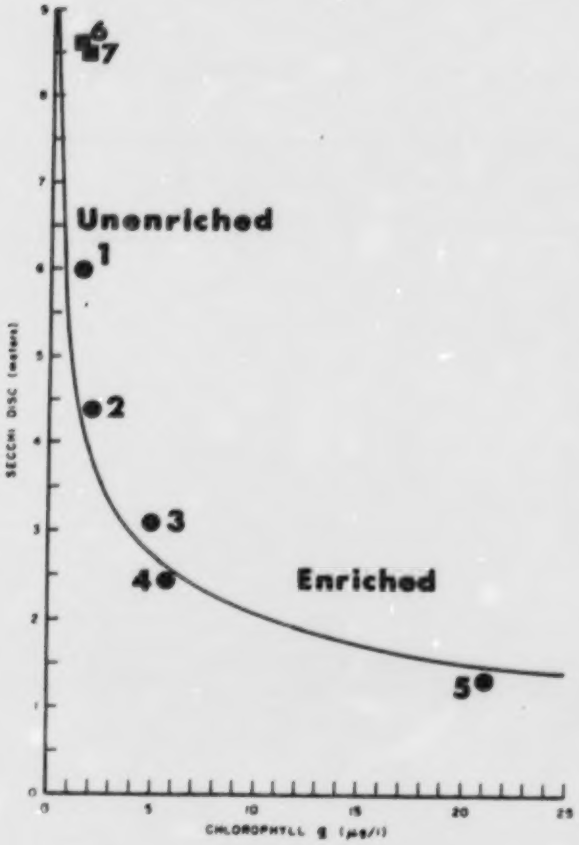
The degree of water transparency was very high and densities of suspended algae were very low in Lake Joseph in 1983. Based on the seasonal averages, Lake Joseph would be considered unenriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Lake Joseph from 1977 to 1983

Station	Yoho Is. A		Yoho Is. B		Cox Bay	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971						
1972						
1973						
1974						
1975						
1976						
1977	8.4	- -	8.6	- -	- -	- -
1978	8.4	1.1	8.5	1.1	- -	- -
1979	8.5	3.6	9.3	2.6	- -	- -
1980	7.6	- -	7.6	- -	- -	- -
1981	7.6*	1.4*	7.5*	1.4*	6.1	1.5
1982	9.0*	0.7*	9.0*	0.8*	6.8*(7.7**)	1.1*(1.3**)
1983	8.6	0.7*	8.5	0.9*	6.0*	- -

* Based on less than 6 samples
** MOE - data

Figure 1: The relationship between Secchi disc and chlorophyll a for Lake Joseph in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Yoho Is A - 1983
7. Yoho Is B - 1983

Since 1977, there have been no major changes in water quality at the two stations sampled. Water transparency has remained consistently high and densities of suspended algae have been very low except in 1979 when higher average chlorophyll a concentrations were observed. Water quality continues to be excellent for recreational use. We would recommend an increase in sampling frequency to 6 times per cottage season, otherwise results will continue to be unreliable.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Lake Muskoka

Twp. of Muskoka Lakes
District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Lake Muskoka in 1983

Station Date	Bala Bay S.D.	Bala Bay Chl.a	Dudley Bay S.D.	Dudley Bay Chl.a	North Bay S.D.	North Bay Chl.a	East Bay S.D.	East Bay Chl.a
July 3	6.75	0.3	5.5	0.2	5.0	0.4	6.5	0.4
July 17	6.0	0.7	6.0	0.6	4.0	0.9	4.25	0.8
July 31	4.5	1.2	5.0	1.3	- -	- -	- -	- -
Aug. 1	- -	- -	- -	- -	4.5	1.0	4.5	1.1
Aug.14	6.0	1.7	5.0	1.6	5.0	1.2	4.0	1.3
Aug.30	3.5	2.5	5.25	1.5	4.5	1.4	5.25	1.4
Sept.5	5.2	1.5	4.0	1.6	5.25	1.0	4.5	1.0
	5.2	1.5	5.1	1.1	4.7	1.0	4.8	1.0

In 1983, the average degree of water transparency was highest in Bala and Dudley Bays At all stations, densities of suspended algae were low.

Based on the information available, all stations would be considered unenriched.

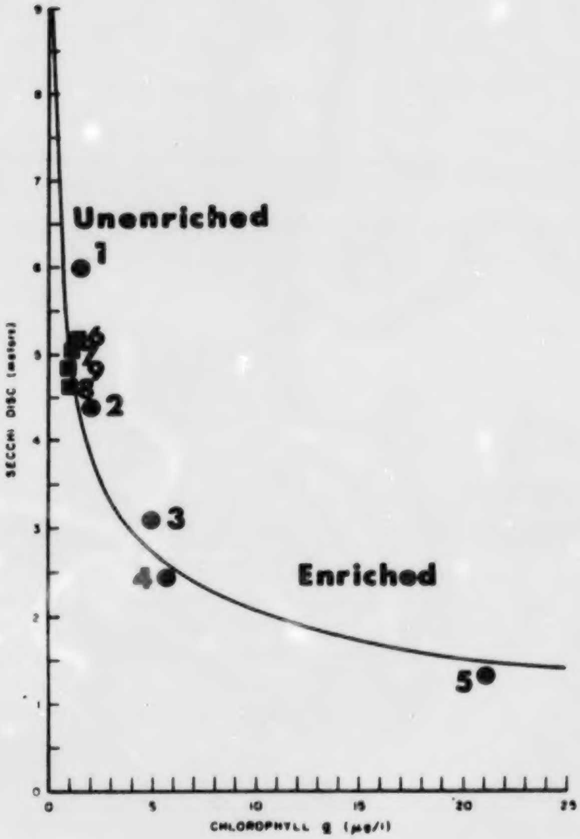
We suggest that the technique for taking Secchi disc readings be checked to ensure that these readings represent true lake conditions Readings must be taken on the shady side of the boat with the sampler getting as close to the lake surface as possible to take the reading.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Lake Muskoka from 1981 to 1983

Station Year	Bala Bay S.D.	Bala Bay Chl.a	Dudley Bay S.D.	Dudley Bay Chl.a	North Bay S.D.	North Bay Chl.a	East Bay S.D.	East Bay Chl.a
1969			4.9*					
1970			5.1**	1.49**				
1971								
1972								
1973								
1974								
1975								
1976								
1977								
1978								
1979								
1980								
1981	7.0	1.0	6.3	0.9	6.7	0.8		
1982	6.2*	1.0*	5.8*(6.2**)	1.2*(1.1**)	6.1*	1.3*		
1983	5.2*	1.5*	5.1*	1.1*	4.7	1.0	4.5	1.0

* based on less than 6 samples
** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Lake Muskoka in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Bala Bay - 1983
7. Dudley Bay - 1983
8. North Bay - 1983
9. East Bay - 1983

Since sampling began there have been no significant changes in water quality in Lake Muskoka. It continues to be excellent for recreational use.

The apparent decrease in water transparency particularly in North Bay suggests that further sampling be done in 1984.

We hope that your participation in this program continues.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Lake Rosseau

Twp. of Muskoka Lakes

District Municipality
of Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Lake Rosseau in 1983

Station	Arthurlie Bay		Skeleton Bay		Morgan Bay	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
July 3,4	4.5	0.9	- -	- -	- -	- -
July 17	- -	- -	4.5	0.8	- -	- -
July 31	- -	- -	- -	- -	5.0	1.2
Aug.1	5.0	2.2	- -	- -	- -	- -
Aug.3	- -	- -	4.5	1.1	- -	- -
Aug.7	- -	- -	- -	- -	5.5	1.7
Aug13,14	3.5	2.1	5.0	1.6	5.5	0.8
Aug.20	- -	- -	- -	- -	7.0	1.6
Aug.28	- -	- -	- -	- -	6.0	0.6
Sept.5	5.75	0.7	4.5	0.9	- -	- -
Sept.25	4.0	1.6	- -	- -	- -	- -
	4.6	1.5	4.6	1.1	5.8	1.2

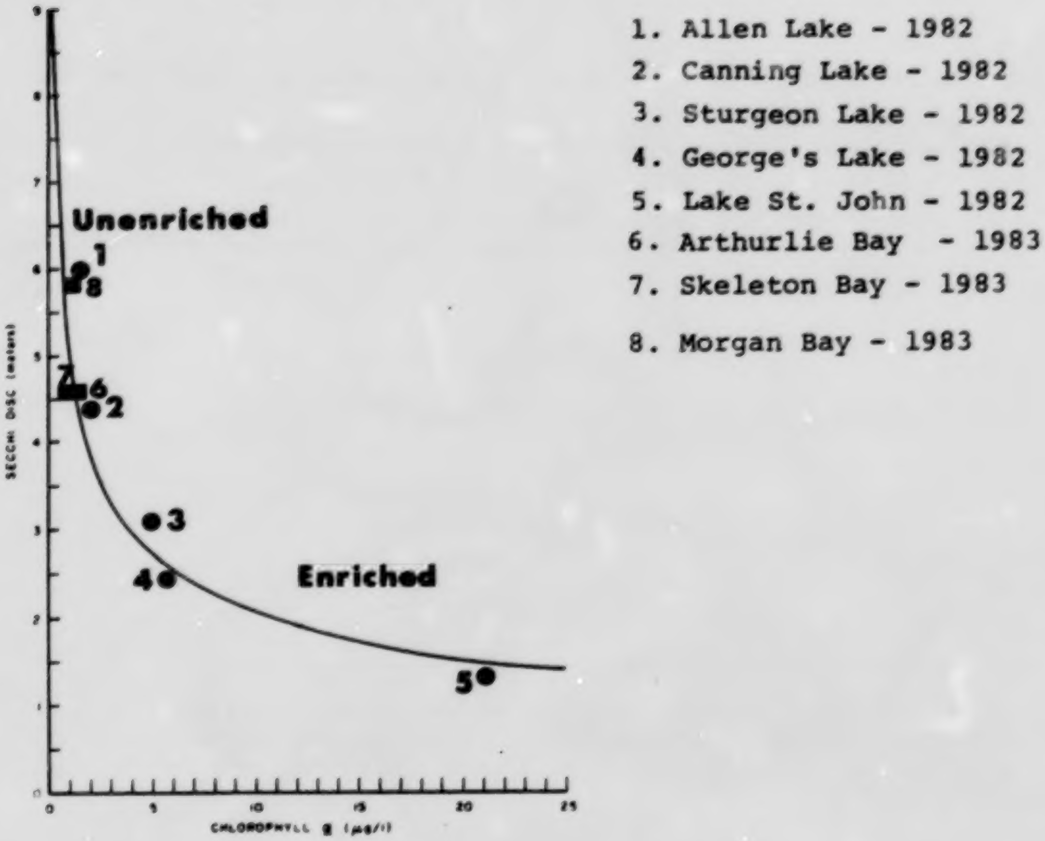
Morgan Bay had the highest degree of water transparency in Lake Rosseau and all stations had low densities of suspended algae. Based on the information available all of these stations would be considered unenriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Lake Rosseau from 1969 to 1983

Station	Arthurlie Bay		Skeleton Bay		Morgan Bay	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1969			5.0**			
1970			5.3**	1.5**		
1971						
1972						
1973						
1974						
1975						
1976						
1977			4.8	- -		
1978			6.2	1.5		
1979			- -	- -		
1980			- -	- -		
1981	6.2	1.2	4.5*	0.8*	5.9	0.8
1982	5.0*	1.2*	5.3*	1.0*	5.4*	1.1*
			(5.9 **)	(1.2 **)		
1983	4.6*	1.5*	4.6*	1.1*	5.8*	1.2*

* Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Lake Rosseau in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Water quality in these three bay stations has not changed significantly and continues to be excellent for recreational use.

The degree of water transparency in Arthurlie and Skeleton Bays was slightly lower than observed in 1982, however, this is within the normal range of fluctuation.

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TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Lake Rosseau in 1983

Station Date	South Basin S.D.	 Chl.a	North Basin S.D.	 Chl.a	Portage Bay S.D.	 Chl.a
July 3,4	5.0	0.5	- -	- -	4.75	0.8
July 17	- -	- -	5.0	0.8	- -	- -
July 24	- -	- -	4.5	1.0	- -	- -
Aug.1	4.75	1.8	- -	- -	4.5	1.9
Aug.3	- -	- -	5.5	1.3	- -	- -
Aug.13,14	3.75?	1.6?	5.5	1.1	4.5	2.1
Sept.5	5.0	0.6	4.0	0.8	5.0	0.9
Sept.25	4.0	1.0	- -	- -	5.0	1.6
	4.5	1.1	4.9	1.0	4.8	1.5

? no lake name given, assumed to be Lake Rosseau.

All stations had a moderately high degree of water transparency and low densities of suspended algae.

Based on the information available, all of these stations would be considered unenriched.

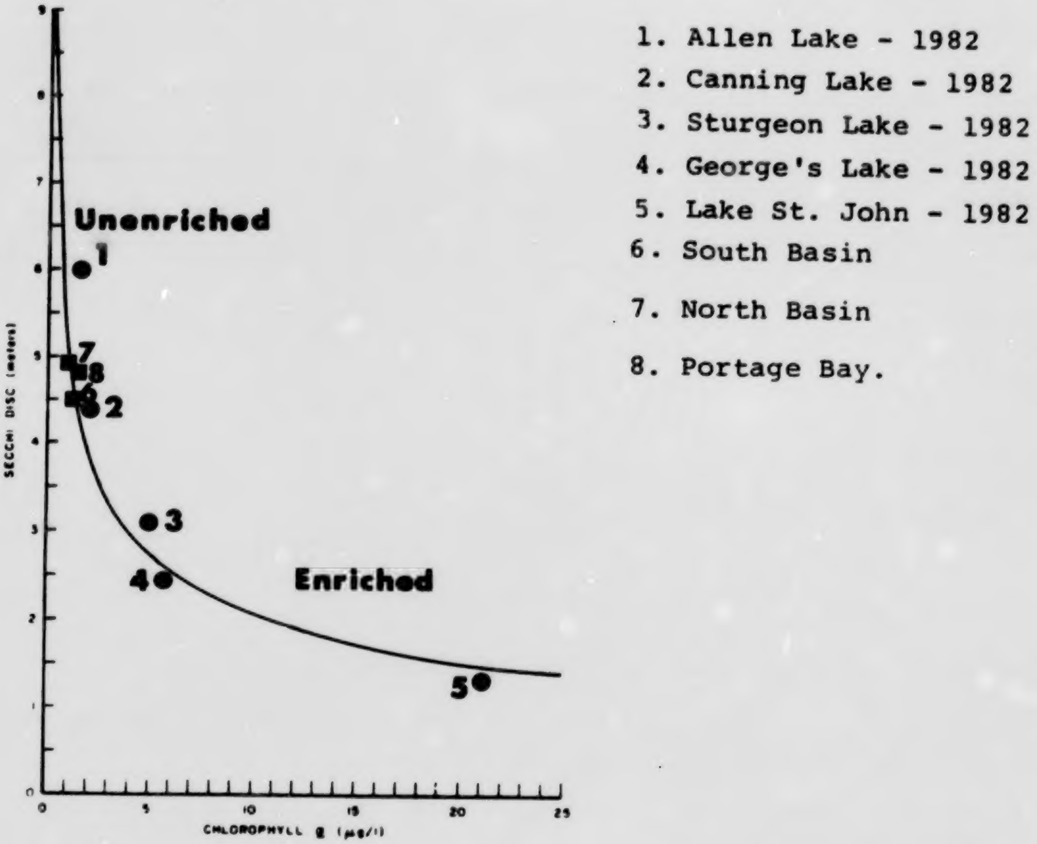
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Lake Rosseau from 1981 to 1983

Station Year	South Basin S.D.	 Chl.a	North Basin S.D.	 Chl.a	Portage Bay S.D.	 Chl.a
1971						
1972						
1973						
1974						
1975						
1976						
1977						
1978						
1979						
1980						
1981	8.0*	1.0*	6.5*	1.2*		
1982	5.4*	1.2*	5.1*(7.0**)	1.0*(0.9**)	5.8*	1.1*
1983	4.5*	1.1*	4.9*	1.0*	4.8*	1.5*

* based on less than 6 samples

** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Lake Rosseau in 1983 and a number of recreational lakes in the province. All data are seasonal means.



The degree of water transparency in 1983 was lower than observed in the previous two years. We suggest that the technique for taking the Secchi disc reading be checked to ensure that the readings represent true lake conditions. Readings must be taken on the shady side of the boat with the sampler getting as close to the water surface as possible to take the reading.

We hope that participation in this program continues in 1984.

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Lake Scugog

Scugog Township
Region of Durham

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Lake Scugog in 1983

Station	Williams Point (S-13)		7 Mile Island (S-14)		West Shore South End (S-15)	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
May 6	1.1	2.5	- -	- -	2.6	5.9
May 23	.7	3.9	- -	- -	- -	2.9
May 29	.9	4.0	- -	- -	1.9	8.9
June 3	1.0	4.0	- -	- -	- -	- -
June 5	- -	- -	1.5	4.8	- -	- -
June 12	1.05	2.8	1.66	4.3	- -	- -
June 19	.8	5.3	1.66	30.6	2.08	3.4
June 26	- -	- -	1.5	9.3	2.06	3.5
July 3	- -	- -	1.66	7.2	- -	- -
July 7	- -	- -	- -	- -	2.02	3.8
July 10	- -	- -	- -	- -	2.9	3.0
July 17	- -	- -	1.0	6.7	- -	- -
July 24	- -	- -	- -	- -	2.0	6.3
Aug. 1	.95	6.2	- -	- -	2.01	4.1
Aug. 8	.85	4.7	- -	- -	- -	- -
Aug. 15	.85	- -	- -	- -	1.0	- -
Aug. 29	.9	5.6	.87	3.9	- -	- -
Sept. 5	- -	- -	.75	5.5	2.06	2.8
Sept.11	.8	3.4	- -	- -	2.06	5.3
Sept.25	.8	10.6	1.0	12.6	2.03	7.5
Oct. 2	.85	7.2	- -	- -	2.0	5.5
Oct. 10	- -	- -	- -	- -	2.01	8.9
	0.9	5.0	1.3	9.4	2.0	5.5

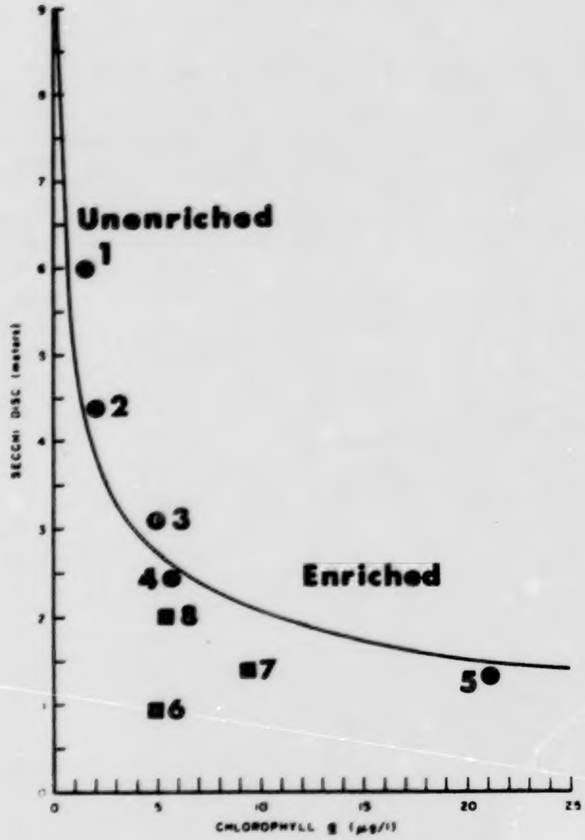
Cont'
p.2

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Lake Scugog from 1972 to 1983

Station	Williams Point (S-13)		Scugog Point (S-12)		7 Mile Island (S-14)		West Shore South End (S-15)	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971								
1972 *	0.8	19.2	0.7	13.2	0.8	15.5	0.9	16.6
1973								
1974								
1975								
1976 *	0.7	14.2					0.8	14.3
1977								
1978								
1979								
1980								
1981								
1982	0.9	7.2	0.7	7.3	1.1	7.9	2.2	6.6
1983	0.9	5.0	- -	- -	1.3	9.4	2.0	5.5

* MOE data from approximately the same location

Figure 1: The relationship between Secchi disc and chlorophyll a for Lake Scugog in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Lake Scugog - 1983 Williams Point
7. 7 Mile Island - 1983
8. West Shore South End - 1983

The past two years mean values indicated a significantly lower algal density in the lake at all stations sampled. It is recommended that the sampling program be continued so that long-term trends can be confirmed.

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cont'd from p.1

Lake Scugog

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Lake Scugog in 1983

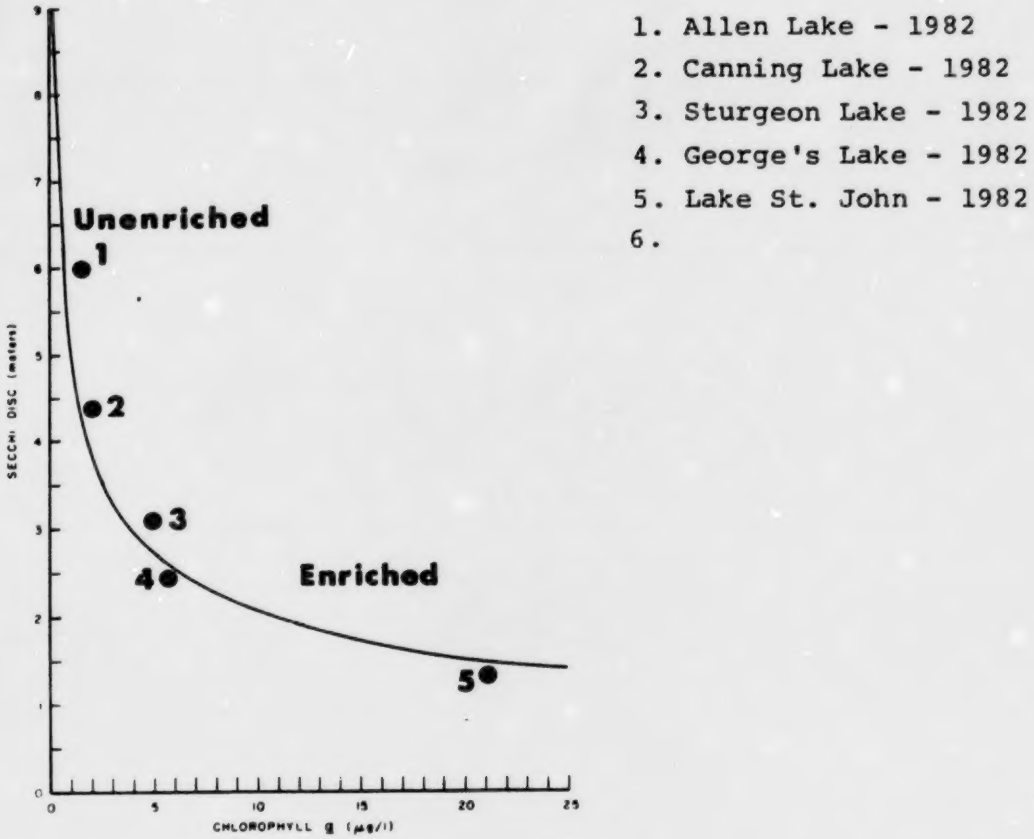
Station
Date

The seasonal trend in Secchi disc values and chlorophyll a concentrations showed only a narrow range of values for each station sampled. Based on the mean values for the two parameters, Scugog Lake was considered enriched with moderately high algal densities and poor water clarity. A slight improvement in clarity was noted from William's Point Station to West Shore Station. However, no corresponding difference in algal density was noted. This suggests that the clarity is being effected more by non-living suspended material more in the shallower Port Perry Area than off Caesarea.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from

Station Year
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



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Lake St. John

Rama Township
Simcoe County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Lake St. John in 1983

Station	Main	
Date	S.D.	Chl.a
June 26	4.2	3.2
July 10	5.0	1.8
July 24	2.25	5.1
Aug. 7	3.0	5.2
Aug. 14	2.0	16.8
Aug. 28	1.75	14.2
	3.0	7.7

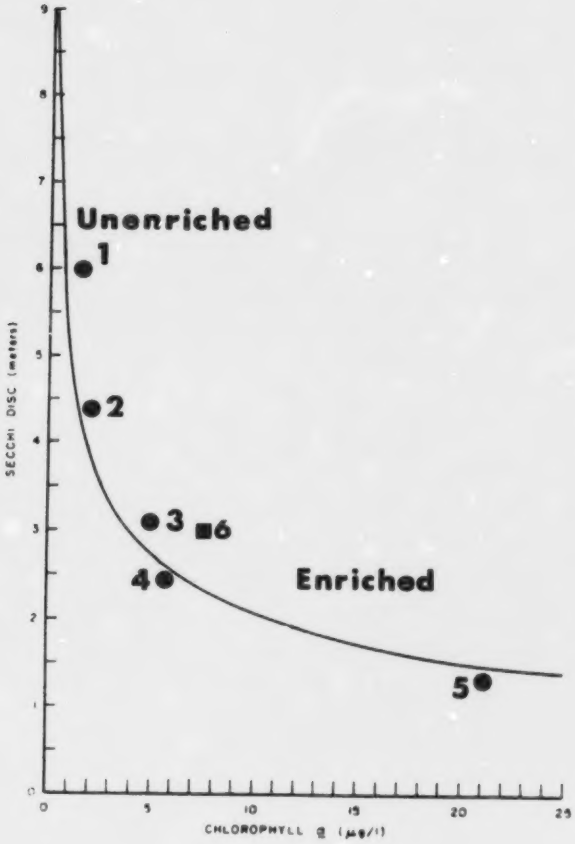
An increasing chlorophyll a concentration toward late Summer indicated that blue-green algae blooms were occuring. This is a typical occurence in an enriched Lake.

Based on the mean values of the two parameters Lake St. John was considered enriched with high algae density and moderately low water clarity.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Lake St. John from 1979 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979	1.9	12.1
1980	2.0	20.4
1981	2.4	10.0
1982	1.4	21.2
1983	3.0	7.7

Figure 1: The relationship between Secchi disc and chlorophyll a for Lake St. John in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Lake St. John - 1983

There may have been an improvement in enrichment status in 1983 as indicated by table 2. Continued participation in the sampling program is recommended to confirm long-term trends.

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Leech Lake

Oakley Ward
Town of Bracebridge
District Municipality of Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Leech Lake in 1983

Station	A. North Bay		B. East Bay		C. West Bay	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
June 12	4.5	1.4	4.0	1.1	4.0	1.5
June 19	4.0	2.2	3.5	2.4	4.0	1.6
June 26	4.0	3.3	4.0	2.6	4.0	2.5
July 10	4.5	2.9	5.0	2.2	5.0	1.6
July 17	5.25	1.8	5.25	2.6	5.25	1.7
Aug.7	5.25	9.8	5.0	6.5	5.0	4.9
Aug.14	5.0	4.4	5.0	6.1	5.0	5.6
Aug.21	5.75	1.0	5.75	2.9	- -	- -
Sept.11	5.5	0.9	5.5	1.0	5.5	1.3
	4.9	3.1	4.8	3.0	4.7	2.6

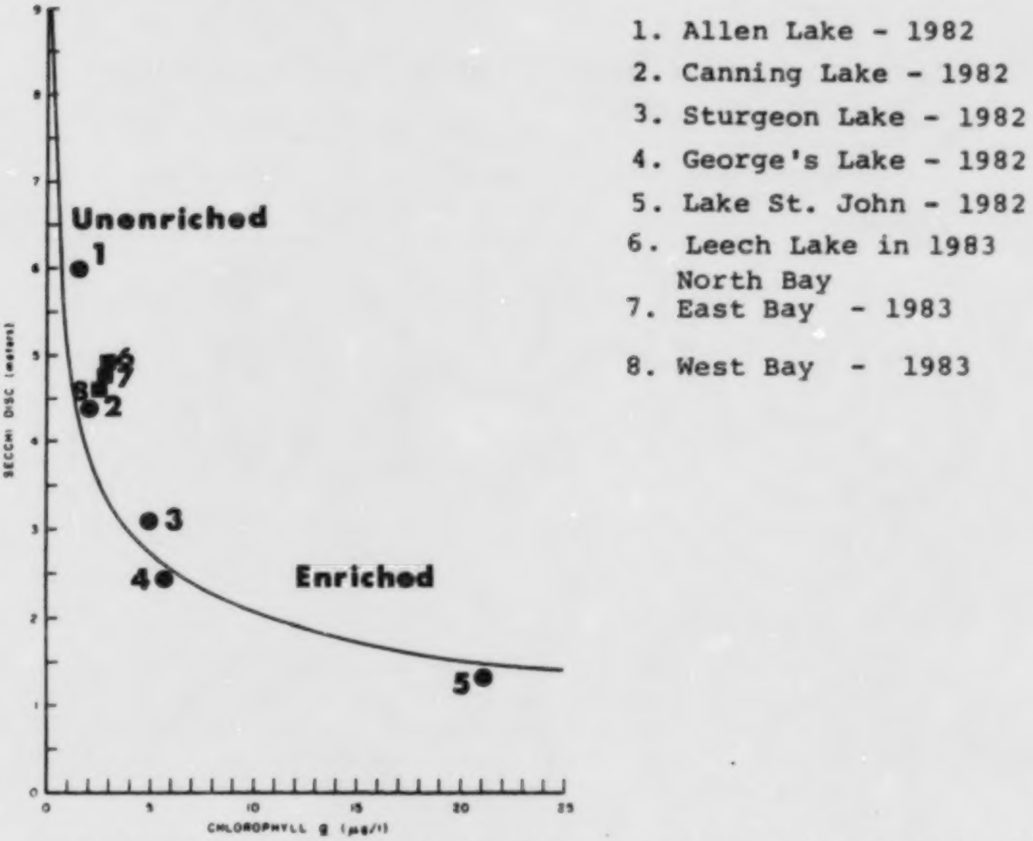
In 1983, an excellent sampling program was conducted on Leech Lake. At all stations, the degree of water transparency was moderately high and densities of suspended algae were also moderately high, particularly during early August. Secchi disc readings ranged from 3.5 to 5.75 m and chlorophyl a concentrations ranged from 0.9 to 9.8 ug/L.

Based on the seasonal averages Leech Lake would be considered moderately enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Leech Lake from 1977 to 1983

Station	A. North Bay		B. East Bay		C. West Bay	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971						
1972						
1973						
1974						
1975						
1976						
1977	5.4	- -	5.0	- -	5.4	- -
1978	3.8	4.5	4.1	4.4	4.0	5.1
1979	4.6	4.0	4.8	4.5	5.0	6.5
1980	4.2	4.0	4.0	4.2	4.6	5.8
1981	4.6	3.0	4.6	3.5	4.7	3.8
1982	4.3	3.0	4.3	2.6	4.7	2.6
1983	4.9	3.1	4.8	3.0	4.7	2.6

Figure 1: The relationship between Secchi disc and chlorophyll a for Leech Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1977, there have been no major changes in water quality in Leech Lake although average chlorophyll a concentrations appear to have decreased slightly. The average Secchi disc readings have shown little variation ranging from 3.8 to 5.4 m. Water quality of Leech Lake continues to be very good for recreational use.

Congratulations on excellent sampling program. We hope your enthusiastic participation continues in 1984.

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Little Glamor Lake

Monmouth and Glamorgan Township

County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Little Glamor Lake in 1983

Station	Centre	
Date	S.D.	Chl.a
June 6	2.75	2.0
June 19	2.50	2.7
July 3	3.0	2.8
July 14	3.2	5.2
	2.9	3.2

In 1983, the Secchi disc readings ranged from 2.5 to 3.2 m and chlorophyll a concentrations ranged from 2.0 to 5.2 ug/L.

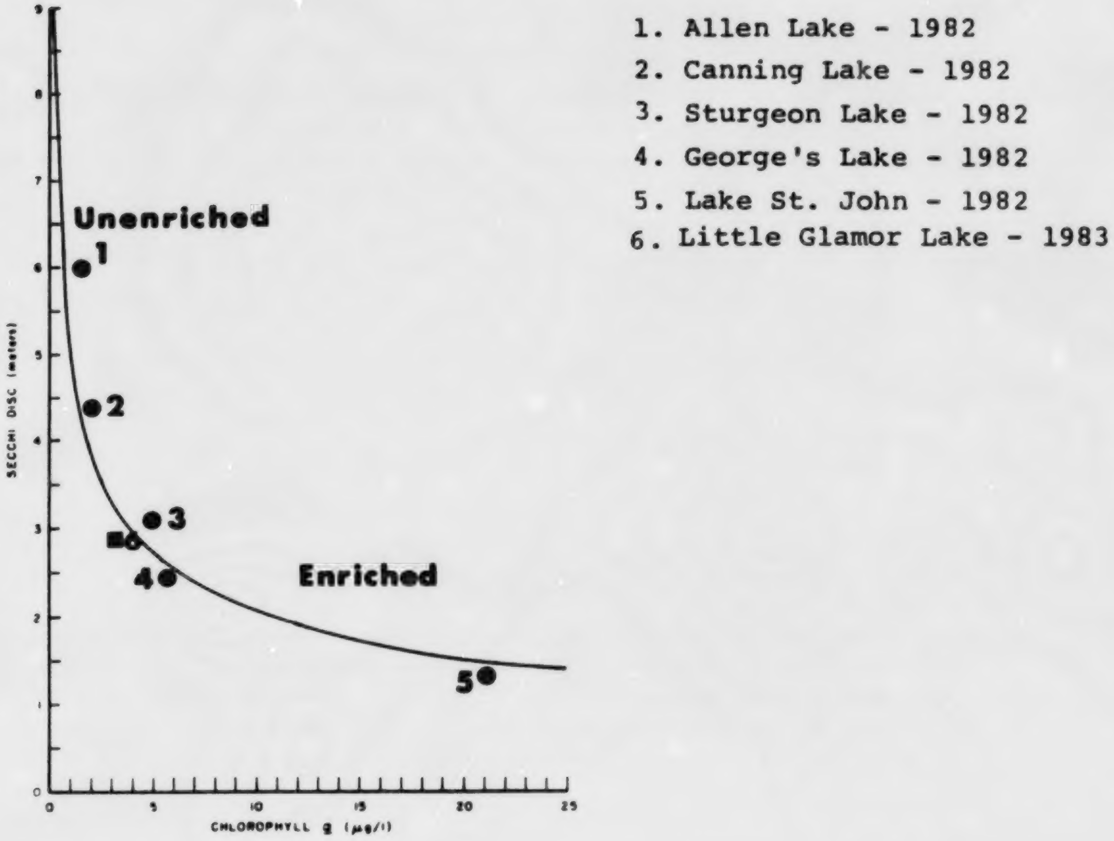
Based on the information available, Little Glamor Lake would be considered borderline between moderately enriched and enriched, characterized by a moderately low degree of water transparency and moderately high densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Little Glamor Lake in 1983

Station	Centre	
Year	S.D.	Chl.a
1971	2.5	3.4
1972	1.8	5.2
1973	2.8*	4.3*
1974		
1975		
1976		
1977		
1978		
1979		
1980		
1981		
1982		
1983	2.9*	3.2*

* based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Little Glamor Lake and a number of recreational lakes in the province. All data are seasonal means.



There have been no major changes in water quality in Little Glamor Lake since sampling was done in the early 70's. There is some annual fluctuation in average chlorophyll a concentrations due to periodic algae blooms. Water quality continues to be suitable for recreation.

We hope that your participation in this program continues in 1984.

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Little Hawk Lake

Stanhope Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Little Hawk Lake in 1983

Station	1(North End)		2(South End)	
Date	S.D.	Chl.a	S.D.	Chl.a
June 19?	10.5	0.8	11.0	0.9
July 3 ?	8.25	1.1	8.25	1.2
July 17	8.5	0.6	9.5	0.7
Aug.1	9.5	1.1	9.0	LA
Aug.14	9.5	1.1	8.5	LA
Sept.5	9.0	1.0	9.5	1.0
	9.2	1.0	9.3	1.0

? Station locations not given on sheet
LA lab accident

In 1983, the degree of water transparency in Little Hawk Lake was very high and densities of suspended algae were very low at both stations. Secchi disc readings ranged from 8.25 to 11.0 m and chlorophyll a concentrations ranged from 0.7 to 1.2 ug/L.

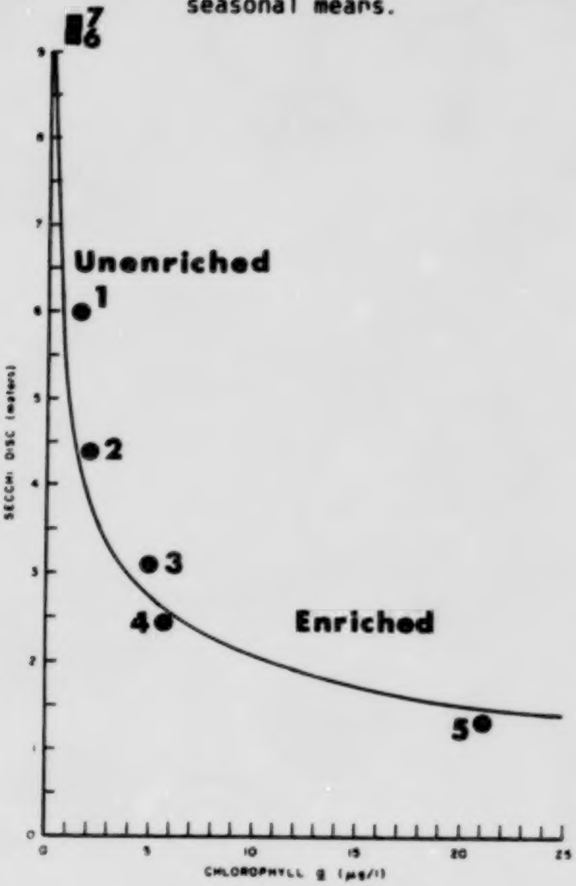
Based on the seasonal averages Little Hawk Lake would be considered unenriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Little Hawk Lake in 1983

Station	1(North End)		2 (South End)	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973				
1974				
1975				
1976				
1977				
1978				
1979				
1980				
1981				
1982				
1983	9.2	1.0	9.3	1.0*

* based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Little Hawk Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Little Hawk Lake - 1983
   North End
7. South End - 1983

We now have one year of reliable seasonal average data for Little Hawk Lake.

We hope your participation in this program continues so that a long-term record of water quality can be established.

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Little Kennisis Lake
Havelock Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Little Kennisis Lake in 1983

Station	Main	
Date	S.D.	Chl.a
June 19	5.0	0.7
July 10	5.0	0.6
	5.0	0.7

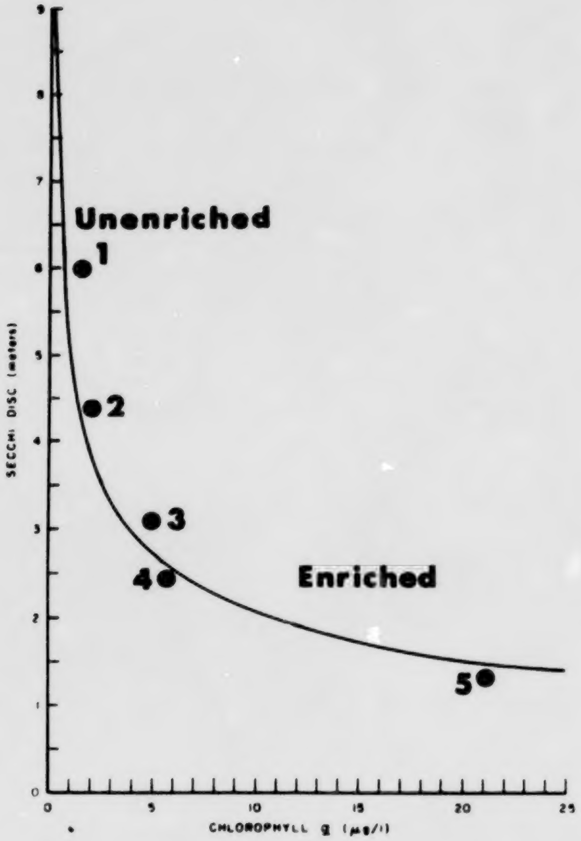
Insufficient sampling was done in 1983 to obtain reliable seasonal averages.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Little Kennisis Lake from 1972 to 1982

Station	Main	
Year	S.D.	Chl.a
1971		
1972	4.5*	1.6*
1973	4.8	1.1
1974	5.3	1.1
1975	5.5	1.0
1976	5.3*	2.0*
1977	6.3(6.3**)	- -
1978	5.5	1.4
1979	- -	- -
1980	4.2	1.7
1981	4.8*	1.4*
1982	4.6*	1.5*
1983	5.0*	0.7*

* Based on less than 6 samples
** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for ind a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982

We recommend that sampling frequency be increased if possible to 6 times during the cottage season.

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Little Straggle Lake
Harcourt Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Little Straggle Lake in 1983

Station	Main	
Date	S.D.	Chl.a
June 19	5.3	2.4
July 3	4.0	2.9
July 17	3.7	2.7
Aug.21	5.8	2.6
	4.7	2.7

In 1983, the Secchi disc readings ranged from 3.7 to 5.8 m and chlorophyll a concentrations ranged from 2.4 to 2.9 ug/L.

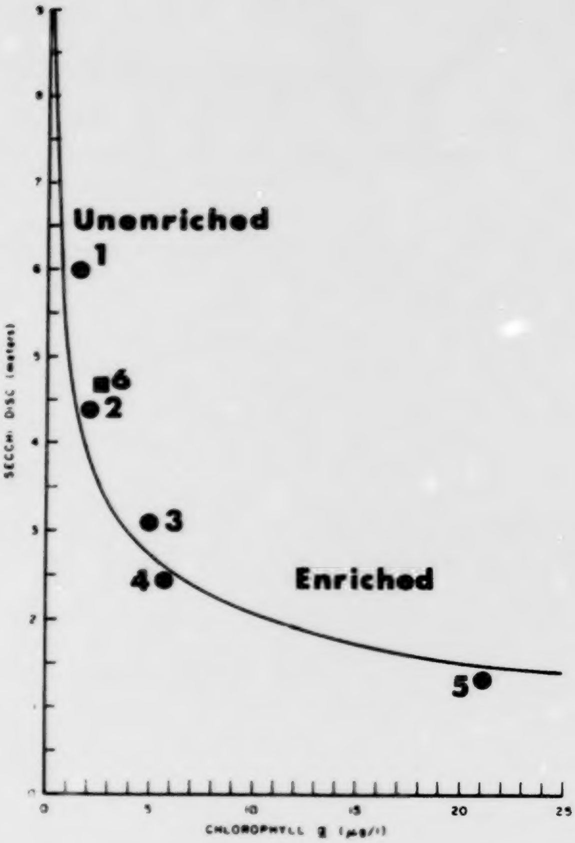
Based on the information available, Little Straggle Lake would be considered moderately enriched, characterized by a moderately high degree of water transparency and moderately low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Little Straggle Lake from 1973 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972		
1973	3.8**	2.9**
1974	3.6	1.6
1975	5.3	2.4
1976	4.1	2.2
1977	5.3(4.5*)	-
1978	4.6	2.4
1979	4.3	4.0
1980	4.9	3.9
1981	5.3	2.8
1982	4.0**	2.8**
1983	4.7**	2.7**

* MOE data
** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Little Straggle Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Little Straggle Lake - 1983

Since 1973, average Secchi disc readings have ranged from 3.6 to 5.3 m and average chlorophyll a concentrations have ranged from 1.6 to 4.0 ug/L.

These results are within the normal range of variation for moderately enriched lakes.

We hope that participation in this program continues in 1984.

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Long Lake

Dudley Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Long Lake in 1983

Station	(1) West	
Date	S.D.	Chl.a
June 5	4.5	1.8
June 19	6.5	1.7
July 3	5.0	3.8
July 10	4.5	3.1
Aug.7	5.5	4.5
	5.2	3.0

In 1983, the degree of water transparency was high with Secchi disc readings ranging from 4.5 to 6.5 m. The densities of suspended algae increased during the latter half of the sampling period with chlorophyll a concentrations ranging from 1.7 to 4.5 ug/L.

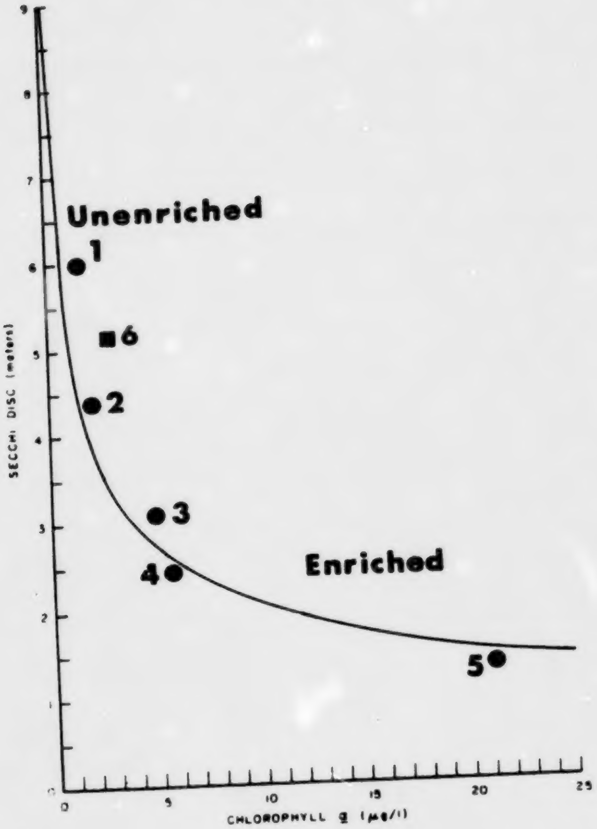
Based on the information available Long Lake would be considered moderately enriched but having a high degree of water transparency. The west basin of Long Lake is quite shallow (maximum depth less than 10 m) which may account for the higher densities of suspended algae since the sunlight can penetrate right to the bottom. This provides the optimal conditions for algae growth.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Long Lake from 1977 to 1983

Station	1. West	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977	5.6	- -
1978	6.3*	5.0*
1979	5.6	5.7
1980	4.9	6.6
1981	5.3	3.7
1982	5.3*	4.4*
1983	5.2*	3.0*

* Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Long Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Long Lake - 1983

Since 1977, average Secchi disc readings have not changed significantly ranging from 4.9 to 6.3 m.

The average chlorophyll a concentrations have ranged from 3.0 ug/L in 1983 to 6.6 ug/L in 1980. This is due to periodic algae blooms which can occur in moderately enriched lakes.

We hope your participation in this program continues in 1984.

For additional copies of this report, please contact:

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DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan
Sharma

Loon Lake

Dysart Township

County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Loon Lake in 1983

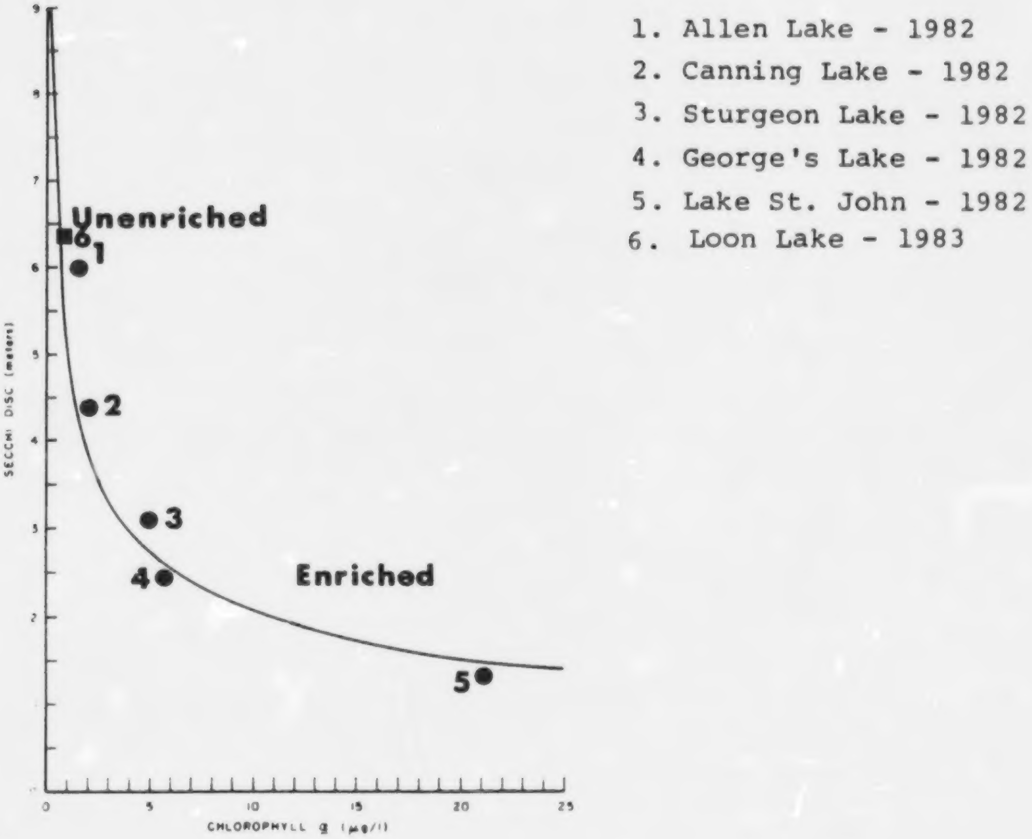
Station	Main	
Date	S.D.	Chl.a
May 22	5.9	0.5
June 5	6.1	1.5
June 26	6.5	0.7
Aug.14	6.5	1.2
Aug.27	6.5	0.6
Oct.10	6.5	0.9
	6.3	0.9

A good sampling program was conducted on Loon Lake in 1983. Secchi disc readings ranged from 5.9 to 6.5 m and chlorophyll a concentrations ranged from 0.5 to 1.5 ug/L. Based on the seasonal averages Loon Lake would be considered unenriched, characterized by a high degree of water transparency and low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Loon Lake from 1979 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979	4.8	1.8
1980	4.4	2.3
1981	5.6*	1.6*
1982	5.5	1.5
1983	6.3	0.9

Figure 1: The relationship between Secchi disc and chlorophyll a for Loon Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1979, there has been a gradual increase in the degree of water transparency with average Secchi disc readings increasing from 4.8 m in 1979 to 6.3 m in 1983. Average chlorophyll a concentrations have ranged from 0.9 to 2.3 ug/L. Water quality remains excellent for recreational use.

We hope participation in this program continues in 1984.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Looncall Lake

Township of Burleigh
County of Peterborough

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Looncall Lake in 1983

Station	23E		48W	
Date	S.D.	Chl.a	S.D.	Chl.a
May 30	3.0	6.2	4.0	2.2
June 12	3.5	5.4	3.5	4.0
June 20	3.5	5.8	3.5	4.3
June 28	3.5	2.7	3.5	2.3
July 10	4.5	1.6	4.0	1.8
July 28	4.0	2.5	3.5	1.7
Aug. 14	4.5	1.4	4.5	2.2
Sept. 8	3.5	6.1	4.0	3.3
Sept. 20	4.0	3.3	3.5	3.1
	3.8	3.9	3.8	2.8

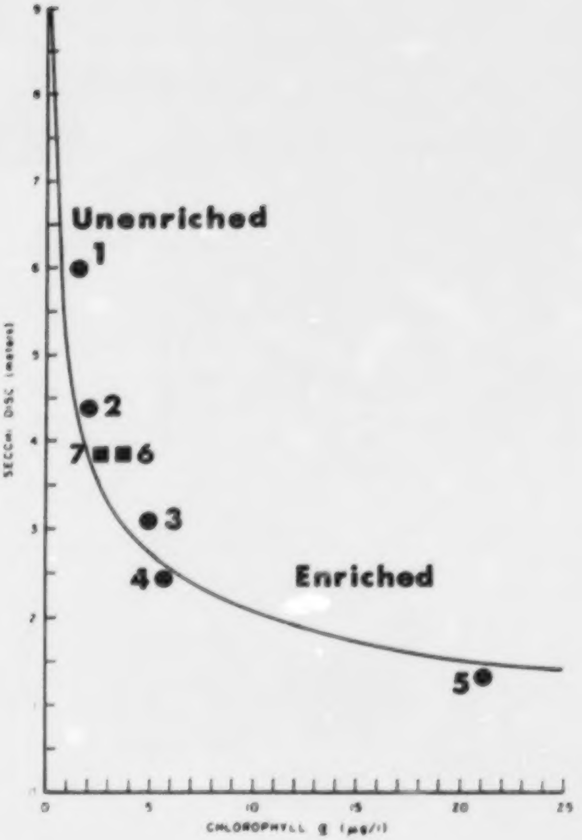
Based on the mean values of the two parameters in Table 1, Looncall Lake was characterized as moderately enriched with moderate algal densities and moderate water clarity.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Looncall Lake from 1971 to 1983

Station	23 East		48 West	
Year	S.D.	Chl.a	S.D.	Chl.a
* 1971			4.5	1.5
1972				
1973				
* 1974			3.4	1.6
* 1975			3.5	1.6
* 1976			3.2	3.9
1977	5.5	- -	4.2	- -
1978			4.0	1.1
1979			3.9	3.0
1980	4.2	2.6	4.2	2.7
**1980	3.9	2.4	4.1	2.2
1981	4.3	3.1	4.2	2.6
1982	4.0	2.8	4.0	2.4
1983	3.8	3.9	3.8	2.8

* Main Lake station
** Samples taken at similar locations by MOE staff

Figure 1: The relationship between Secchi disc and chlorophyll a for Looncall Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Looncall Lake - 1983
   23 East
7. 48 West - 1983

The 1983 results suggested that algal density in the east station has increased appreciably over previous years. The results for the west station, however, indicate no charge in enrichment status. Continued participation in the sampling program is encouraged to confirm long-term trends.

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Lower Buckhorn Lake

Harvey Twp.

Peterborough County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Lower Buckhorn Lake in 1983

Station	Dear Bay Reach Area		Middle North	
Date	S.D.	Chl.a	S.D.	Chl.a
May 23	1.7	4.0	- -	- -
May 29	1.7	4.8	- -	- -
June19	2.1	2.8	- -	- -
July 8	- -	- -	1.8	1.7
Aug. 7	2.3	2.7	- -	- -
Aug.28	1.9	3.2	- -	- -
	1.9	3.5		

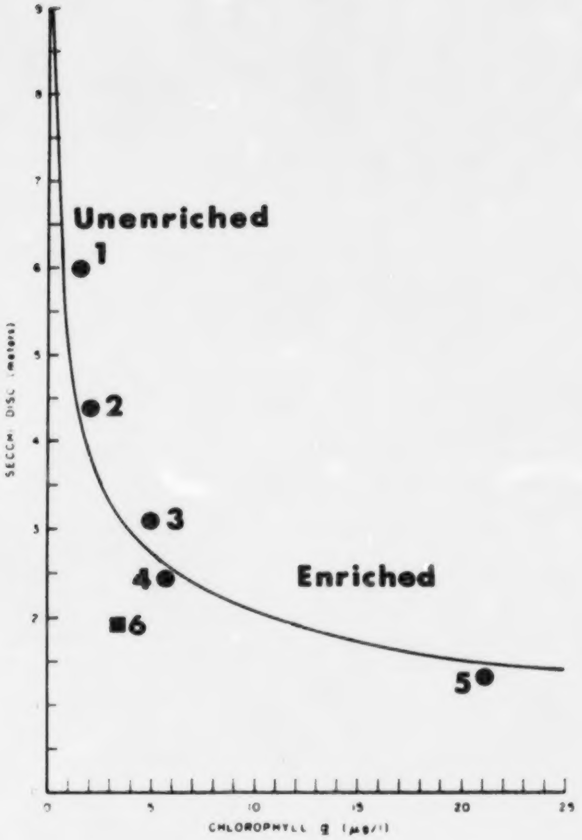
Based on the mean values of Secchi disc and chlorophyll a concentration Dear Bay Reach was considered enriched with moderate algal densities and poor water clarity. Insufficient samples were collected at the "Middle North" station to permit meaningful conclusions to be made. It is recommended that at least six samples be taken throughout the ice-free period in order to get reliable seasonal mean values.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Lower Buckhorn Lake in 1983

Station	Dear Bay Reach		Middle North	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972*	2.9	4.0	2.4	5.3
1973				
1974				
1975				
1976*			2.2	7.0
1977				
1978				
1979				
1980				
1981				
1982				
1983	1.9	3.5	- -	- -

* MOE data collected from same general area

Figure 1: The relationship between Secchi disc and chlorophyll a for Lower Buckhorn Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Lower Buckhorn Lake - 1983

Mean Secchi disc visibility was relatively poorer in 1983 as compared to 1972 data while chlorophyll a concentration changed very little. The difference could have been due simply to year to year variation. Continued participation in the program is encouraged so that long-term trends in enrichment status can be determined.

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Mary Lake

Stephenson & Brunel Wards
Town of Huntsville
District Municipality of Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Mary Lake in 1983

Station Date	Main S.D.	 Chl.a
June 29	4.0	0.7
July 12	4.0	1.4
July 25	4.3	1.0
	4.1	1.0

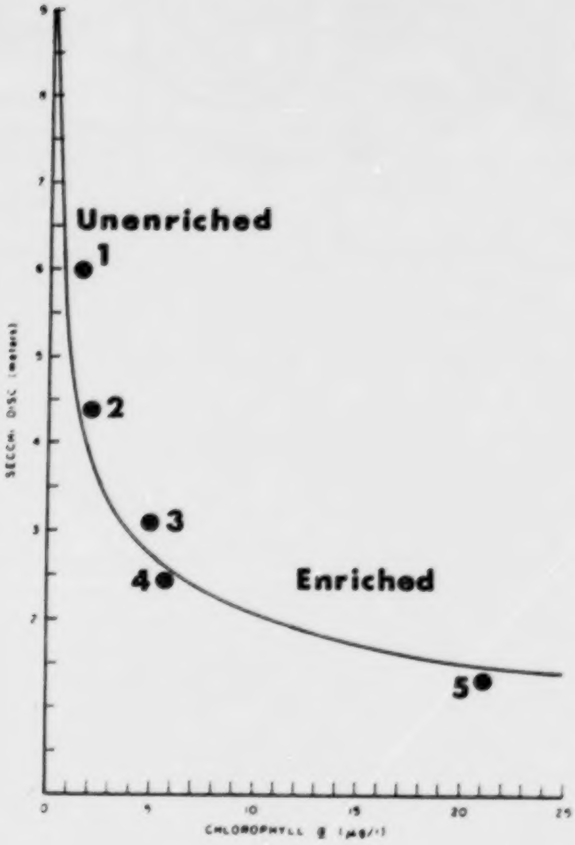
In 1983, insufficient sampling was done to obtain a reliable seasonal average, however, based on the information available, Mary Lake continues to be unenriched. It is characterized by a moderately high degree of water transparency and low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Mary Lake from 1974 to 1983

Station Year	Main S.D.	 Chl.a
1971		
1972		
1973		
1974	4.5*	1.7*
1975	3.8	1.7
1976	4.1	2.3
1977	4.3	- -
1978	4.2(3.1**)	2.5*(2.5**)
1979	4.3*	1.6*
1980	4.1	1.8
1981	4.3*	1.9*
1982	4.0	1.5
1983	4.1*	1.0*

* Based on less than 6 samples
** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982

We hope that participation continues in 1984 with increased sampling frequency.

Water quality of Mary Lake continues to be very good for recreational use.

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Medora Lake

Medora Ward
Township of Muskoka Lakes
District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Medora Lake in 1983

Station	1	
Date	**S.D.**	**Chl.a**
June 1	3.5	1.7
June 12	4.0	1.6
June 26	3.0	SB
July 3	3.0	3.2
July 10	4.0	5.0
July 17	4.0	6.1
Aug.7	4.0	7.2
Aug.28	5.0	1.9
Sept.4	5.0	4.7
Sept.11	4.5	8.6
Sept.25	3.5	2.8
Oct.2	4.0	2.4
	4.0	4.1

SB - samples broken in transit

An excellent sampling program was conducted on Medora Lake in 1983.

The Secchi disc readings ranged from 3.0 to 5.0 m and chlorophyll a concentrations ranged from 1.6 to 8.6 ug/L. Highest densities of suspended algae were observed from mid July to mid September.

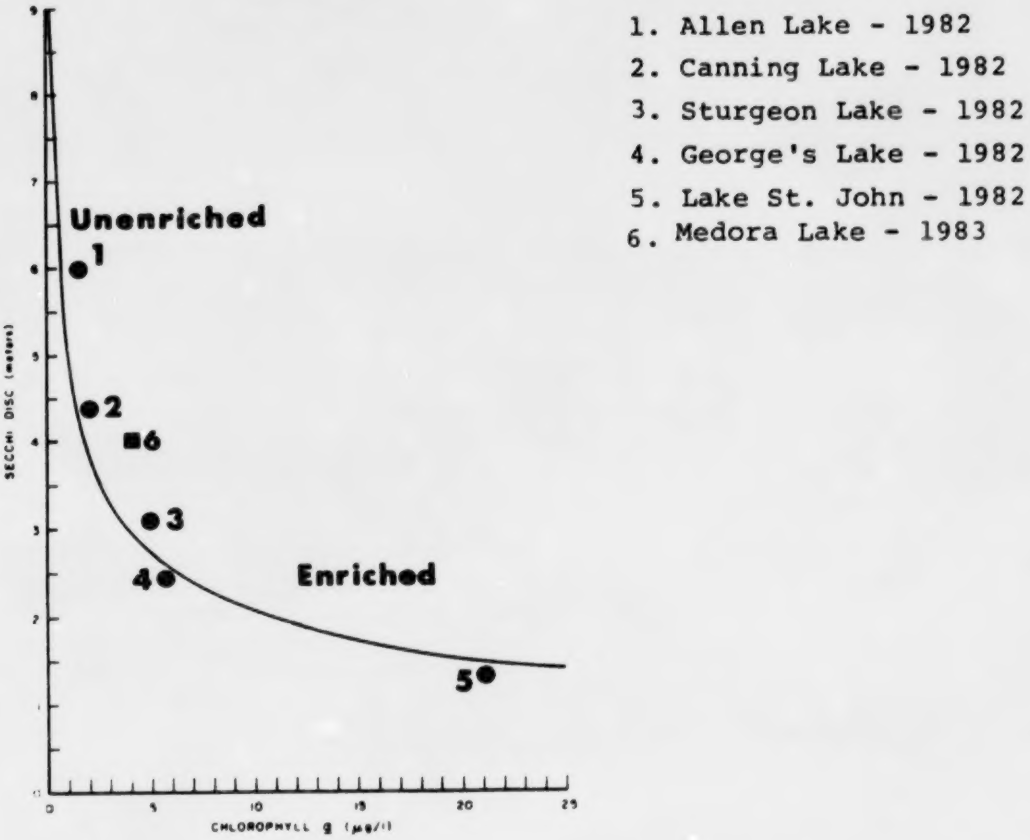
Based on the seasonal averages, Medora Lake would be considered borderline between moderately enriched and enriched. There is a noticeable brown colour in the water due to dissolved peat or humic materials which reduces water transparency somewhat.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Medora Lake from 1974 to 1983

Station	1	
Year	**S.D.**	**Chl.a**
1971		
1972		
1973		
1974	3.7	2.0
1975	4.1	9.0
1976	- -	- -
1977	4.1*	- -
1978	3.6*	3.3*
1979	4.9*	7.1*
1980	6.0	8.6
1981	3.6	3.3
1982	4.2	4.4
1983	4.0(4.4**)	4.1(5.6**)

* Based on less than 6 samples
** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Medora Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1974, there has been considerable fluctuation in average Secchi disc readings ranging from 3.6 to 6.0 m and in average chlorophyll a concentrations ranging from 2.0 to 9.0 ug/L. This would tend to indicate that Medora Lake is subject to periodic algae blooms. This is typical of moderately enriched and enriched lakes. Water quality continues to be suitable for recreational use.

We hope that your enthusiastic participation in the program continues in 1984.

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Miner Lake
Monmouth Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Miner Lake in 1983

Station	1		2	
	West End		East End	
Date	S.D.	Chl.a	S.D.	Chl.a
May 28	4.0	6.4	3.5	2.7
Juen 26	3.5	1.2	4.0	1.4
July 3	3.5	1.3	3.0	0.9
Aug.21	4.0	1.8	4.2	2.3
Aug.26	4.0	0.7	4.2	AD
Aug.27	4.0	0.7	4.2	0.6
	3.8	2.0	3.9	1.6

AD - anomalous data withdrawn at lab.

In 1983, Secchi disc readings were moderately high ranging from 3.0 to 4.2 m. The chlorophyll a concentrations ranged from 0.7 to 6.4 ug/L at the West End and from 0.6 to 2.7 ug/L at the East End. The highest densities of suspended algae occurred in the West End on May 28th. This resulted in a higher average chlorophyll a concentration at this station.

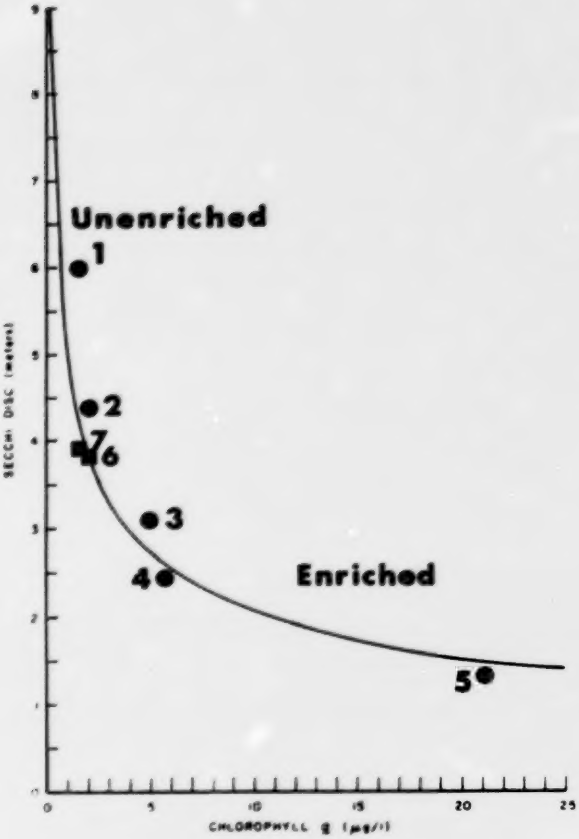
Based on the seasonal averages Miner Lake would be considered borderline between unenriched and moderately enriched, characterized by a moderate degree of water transparency and low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Miner Lake in 1983

Station	West		East	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973				
1974				
1975				
1976				
1977				
1978				
1979				
1980				
1981				
1982				
1983	3.8	2.0	3.9	1.6*

* Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Miner Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Miner Lake - 1983
   West End
7. East End - 1983

We congratulate you on a good sampling program in 1983. We hope your participation continues in 1984 so that we can establish an ongoing record of water quality for Miner Lake.

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Miskwabi Lake

Dudley Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from

Station	#13 East	
Date	S.D.	Chl.a
June 12	6.25	0.5
June 19	8.0	1.1
July 3	4.75	1.5
July 6	7.0	1.5
July 10	5.75	1.4
Sept.5	9.0	1.6
	6.8	1.3

In 1983, a good sampling program was conducted on Miskwabi Lake. The Secchi disc readings ranged from 4.75 m on July 3 to 9.0 m on Sept.5. Chlorophyll a concentrations were low ranging from 0.5 to 1.6 ug/L.

Based on the seasonal averages, Miskwabi Lake would be considered unenriched with a high degree of water transparency and low densities of suspended algae.

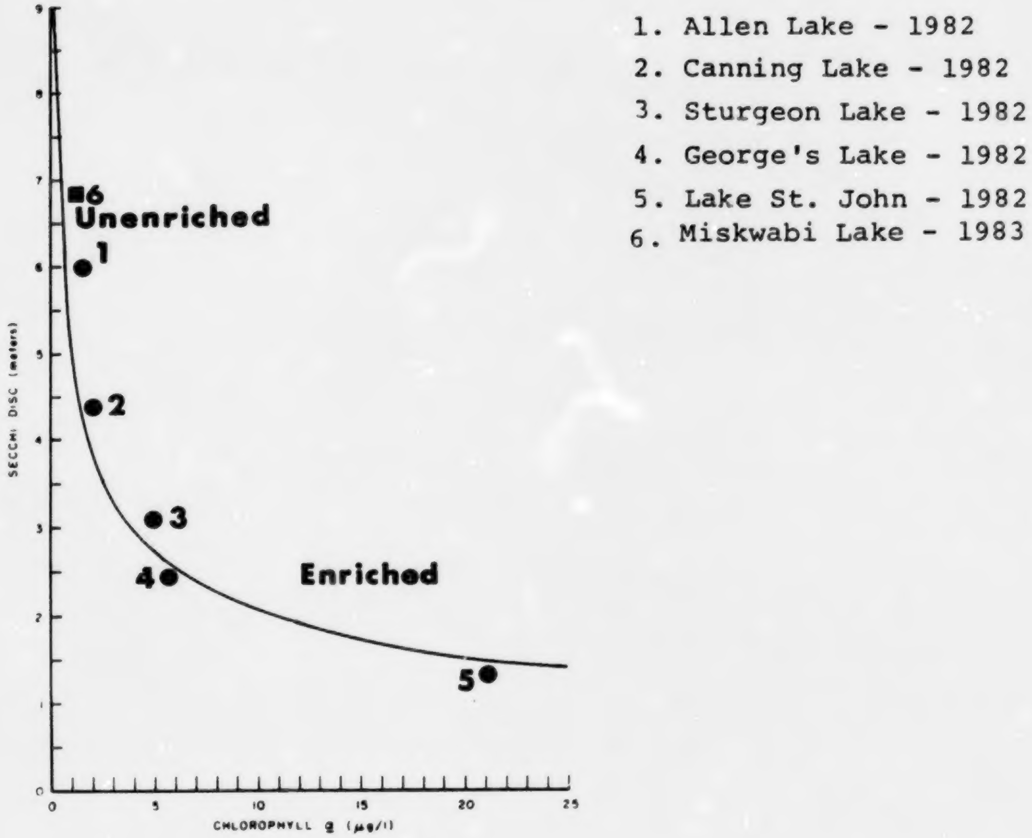
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Miskwabi Lake from 1975 to 1983

Station	13 East	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975	7.0*	1.6*
1976	5.6	2.2
1977	5.9	- -
1978	5.8	2.1
1979	5.6	2.0
1980	5.8	2.2
1981	6.0	1.6
1982	5.9	1.4
1983	6.8	1.3

* MOE data

** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Miskwabi Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1975 there have been no significant water quality trends evident in Miskwabi Lake. Average Secchi disc readings have ranged from 5.6 m in 1976 to 7.0 m in 1975. Average chlorophyll a concentrations have ranged from 1.3 ug/L in 1983 to 2.2 ug/L in 1976 and 1980.

Water quality of Miskwabi Lake continues to be excellent for recreational use.

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TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Mississauga Lake in 1983

Station	North End		South End	
Date	S.D.	Chl.a	S.D.	Chl.a
June 12	4.5	1.7	4.6	2.0
June 25	4.5	1.7	4.2	1.9
July 10	4.7	1.0	4.6	0.7
July 24	4.5	1.2	4.3	0.9
Aug. 21	5.5	1.2	5.7	1.0
	4.7	1.4	4.7	1.3

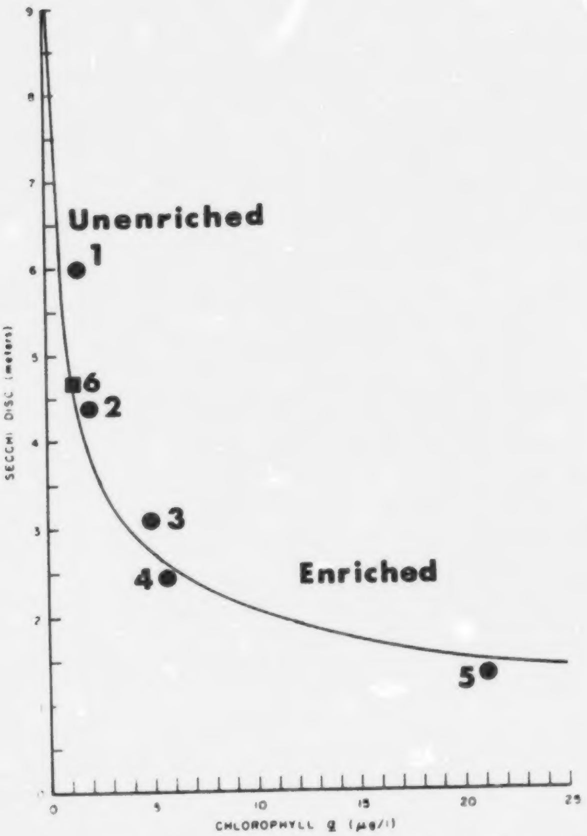
There was no real difference between the measurements taken in the North and South end of the lake. Based on mean values of Secchi disc and chlorophyll a concentration, Mississauga Lake was considered unenriched with favourably low algal densities and a moderately high degree of water clarity.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Mississauga Lake in 1983

Station	North End		South End	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973				
1974				
1975				
1976				
1977				
1978				
1979				
1980*	4.6	1.4		
1981				
1982				
1983	4.7	1.4		

* MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Mississauga Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Mississauga Lake - 1983

Comparing the 1983 data with that of 1980 there appears to have been no change in the enrichment status of Mississauga Lake. Continued participation in the sampling program is encouraged to determine long term water quality trends.

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Moot Lake

McLean Ward

Township of Lake of Bays

District Municipality of
Muskoka

TABLE 1: Seecchi Disc (m) and chlorophyll a (ug/L) data collected from Moot Lake in 1983

Station	South End	
Date	S.D.	Chl.a
Aug.2	2.25	5.1
Aug.14	2.0	5.9
Aug.21	2.5	5.4
Aug.28	2.25	5.8
Sept.4	2.0	4.8
Sept.11	2.0	SB
Sept.18	1.5	4.9
Sept.25	1.5	5.0
Oct.11	2.0	4.8
	2.0	5.2

An excellent sampling program was conducted on Moot Lake in 1983.

Secchi disc readings were low ranging from 1.5 to 2.5 m. Chlorophyll a concentrations were high ranging from 4.8 to 5.9 ug/L.

Based on the seasonal averages, Moot Lake would be considered enriched characterized by a low degree of water transparency and high densities of suspended algae.

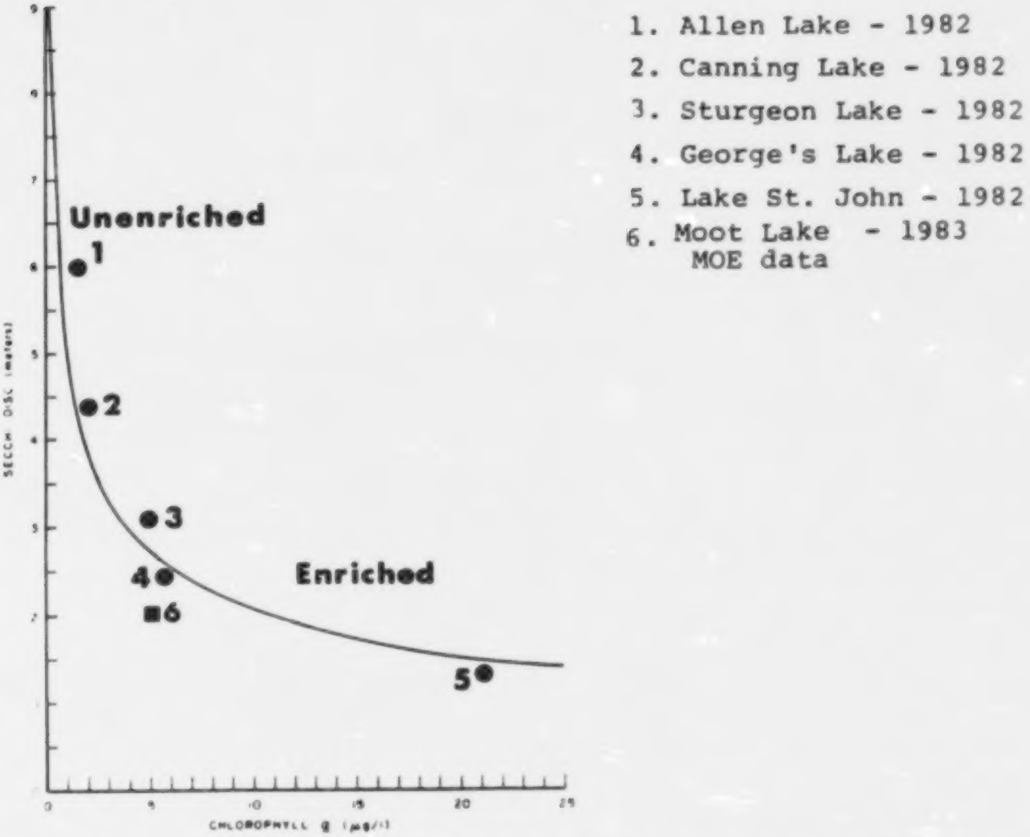
SB - sample broken in transit

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Moot Lake from 1981 to 1983

Station	South End	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979		
1980		
1981	1.5*	7.4*
1982	1.8**	9.0**
1983	2.0	5.2

* MOE data
** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Moot Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1981 there have been no significant changes in average Secchi disc readings ranging from 1.5 to 2.0 m.

Average chlorophyll a concentrations have fluctuated from 5.2 to 9.0 ug/L. This is typical of a shallow enriched lake such as Moot Lake. Water quality is suitable for recreational use, however, periodic algae blooms may occur.

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Mountain Lake

Minden Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Mountain Lake in 1983

Station	(North)		(South)	
Date	S.D.	Chl.a	S.D.	Chl.a
July 3	5.0?	1.5?	- -	- -
July 14	6.0?	1.1?	- -	- -
July 20	5.5	0.6	6.0	0.7
Aug.01	5.5	1.6	6.0	0.8
Aug.07	5.0	1.2	6.0	1.0
Aug.15	4.5	1.8	6.0	1.6
Sept.06	5.0	1.1	5.0	0.8
	5.2	1.3	5.8	1.0

? Station location not given

In 1983 a good sampling program was conducted on Mountain Lake. Secchi disc readings in the north ranged from 4.5 to 6.0 m and in the south from 5.0 to 6.0 m. This indicated a high degree of water transparency. Chlorophyll a concentrations were low ranging from 0.6 to 1.8 ug/L in the north and from 0.7 to 1.6 ug/L in the south.

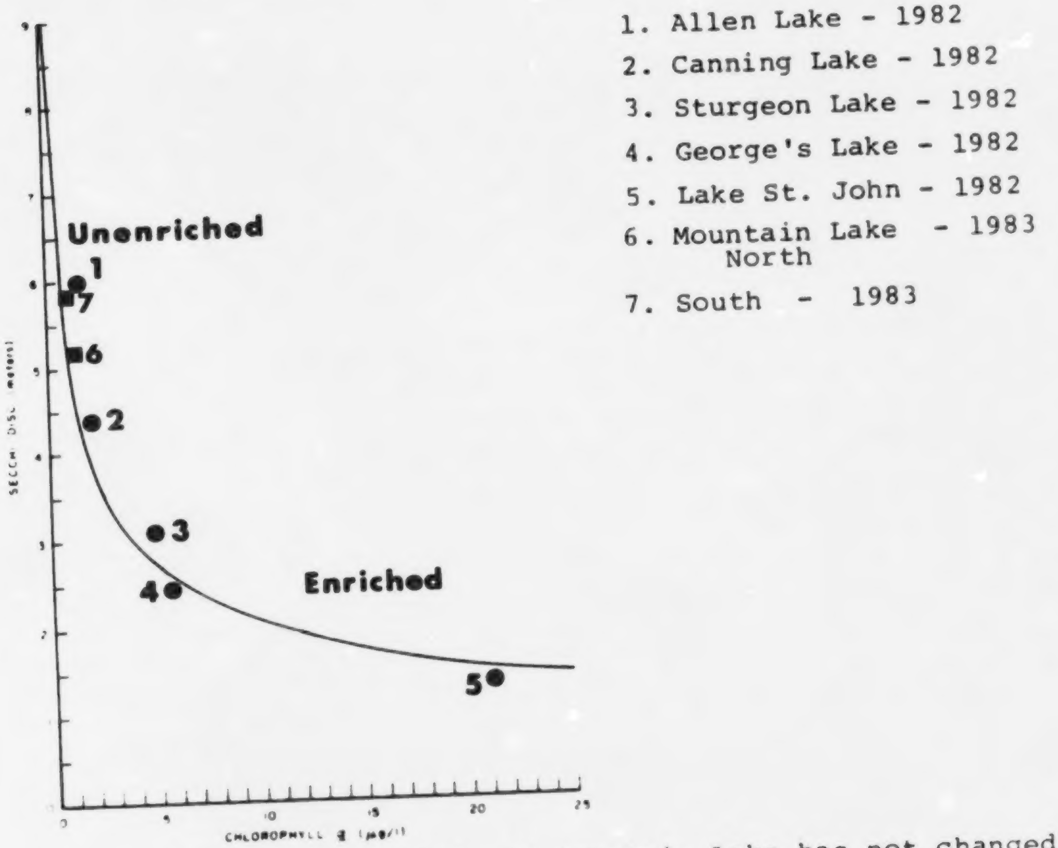
Based on the seasonal averages, Mountain Lake would be considered unenriched with excellent water quality.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Mountain Lake from 1979 to 1983

Station	North		South	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973			5.8*	1.8*
1974				
1975				
1976				
1977				
1978				
1979	5.6	1.6	5.9	1.8
1980	4.9	2.0	5.5	1.7
1981	4.7	1.6	4.8	1.7
1982	4.9	1.7	5.0	1.8
1983	5.2	1.3	5.8*(5.8**)	1.0*(1.4**)

* Based on less than 6 samples
** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Mountain Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1973, water quality of Mountain Lake has not changed significantly.

Average Secchi disc readings have been high. ranging from 4.7 to 5.6 m at the north station and from 4.8 to 5.9 m at the south station average chlorophyll a concentrations have been consistently low ranging from 1.0 to 2.0 ug/L. Water quality continues to be excellent for recreational use.

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Muldrew Lake

Muskoka, Wood & Morrison
Wards

Town of Gravenhurst

District Municipality of Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Muldrew Lake in 1983

Station	North		Miramichi		South	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
June 26	2.1	3.5				
July 3	2.55	2.4				
July 10	3.35	2.9				
July 17	2.3	1.3				
July 24	2.75	1.5				
Aug.1	- -	- -			NG	TX
Aug.7	- -	- -			NG	1.6
Aug.14	3.1	2.2			- -	- -
Aug.14	3.3	2.5			- -	- -
Aug.21	3.6	1.2			3.75	5.7
Aug.30	3.15	1.6				
Sept.4	5.0	1.3	3.25	1.4		
Sept.6	2.65	1.5	- -	- -		
Sept.11	3.0	3.2	- -	- -		
Oct.9	3.8	2.1	4.0	1.5		
	3.1	2.1	3.6	1.5	3.75	3.7

NG not given
TX sample more than 48 hours old when received

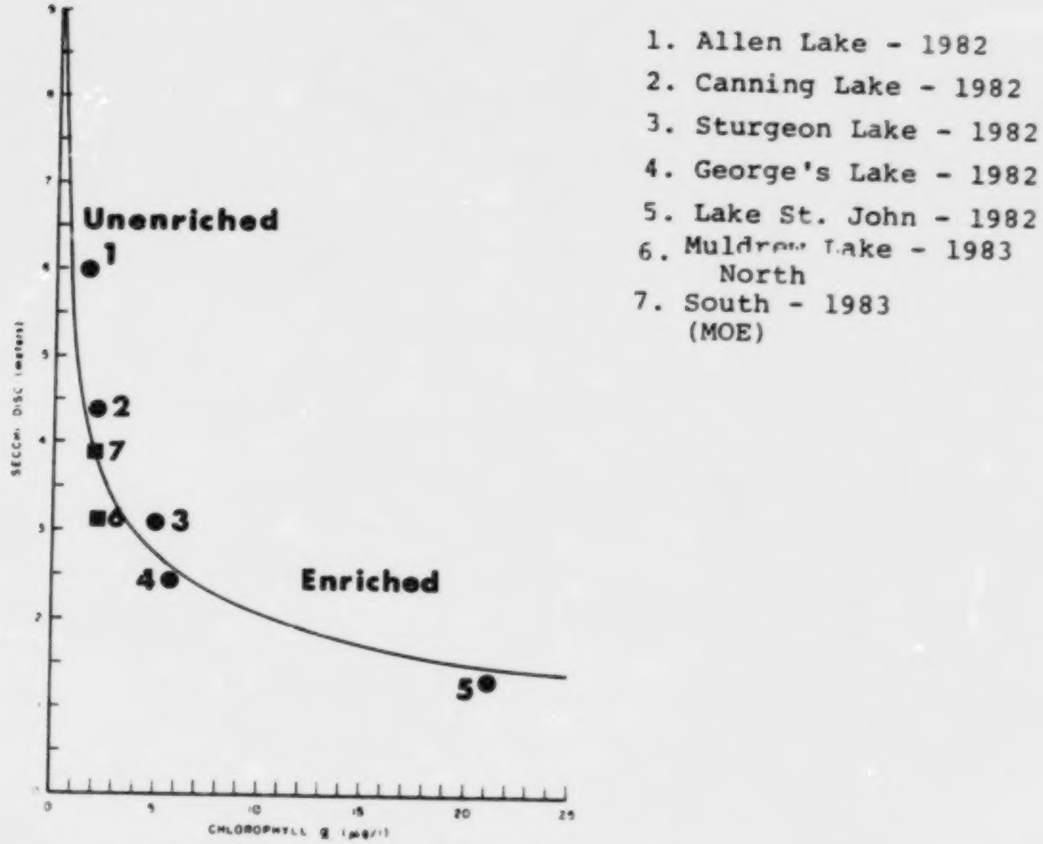
(cont'd p.....2)

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Muldrew Lake from 1977 to 1983

Station	North		Miramichi		South	
Year	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
1971						
1972						
1973						
1974						
1975						
1976	3.9*	2.9*				
1977	3.7	- -				
1978	3.0*	1.9*				
1979	2.7	5.0				
1980	3.5	4.0	3.1*	3.8*		
1981	3.4	5.9	3.4	4.6		
1982	3.4	3.5	3.3	4.8		
1983	3.1(3.8**)	2.1(2.4**)	3.6*	1.5*	3.75*(3.9**)	3.7*(2.1**)

* Based on less than 6 samples
** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Muldrew Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1976, average Secchi disc reading in North Muldrew Lake have ranged from 2.7 to 3.9 m and average chlorophyll a concentrations have ranged from 1.9 to 5.9 ug/L. This indicates a wide range in densities of suspended algae which is typical of shallow, moderately enriched lakes such as Muldrew Lake which experience periodic algae blooms. Water quality has generally been good for recreational use.

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(cont'd from p.....1)

Muldrew Lake

Muskoka, Wood & Morrison
Wards

Town of Gravenhurst

District Municipality of Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Muldrew Lake in 1983

Station
Date

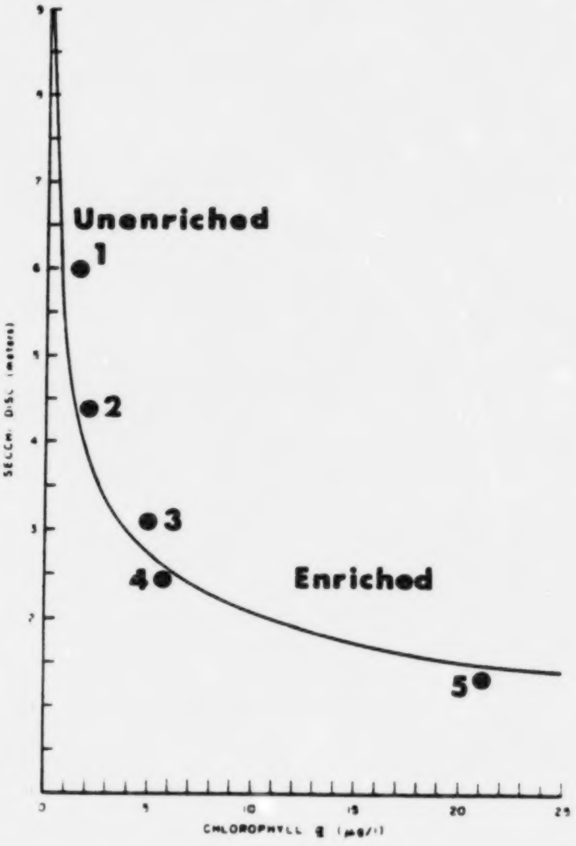
In 1983, an excellent sampling program was conducted on North Muldrew Lake. Insufficient sampling was done at the other 2 stations Secchi disc readings were low ranging from 2.1 to 5.9 m and chlorophyll a concentrations were moderately low ranging from 1.2 to 3.5 ug/L.

Based on the seasonal averages, North Muldrew Lake would be moderately enriched characterized by moderately low densities of suspended algae and moderate degree of water transparency. Muldrew Lake has a noticeable brown colour from dissolved peat substances. This has reduced the water transparency somewhat.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from

Station
Year
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6.

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Nine Mile Lake
Wood Ward
Township of Muskoka Lakes
District Municipality of Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Nine Mile Lake in 1983

Station	Southeast	
Date	S.D.	Chl.a
May 22	2.45	3.4
May 28	2.4	2.4
June 19	2.8	0.4
June 26	2.5	2.2
July 2	2.45	2.5
July 10	2.25	2.3
July 17	2.4	1.5
July 24	2.3	1.0
Aug.10	2.5	2.1
Aug.14	3.5	4.1
Aug.21	3.6	LA
Aug.26	3.6	1.4
Sept. 4	3.5	1.4
Oct. 6	3.2	2.3
	2.8	2.1

LA lab accident

An excellent sampling program was conducted on Nine Mile Lake in 1983. Secchi disc readings were low ranging from 2.25 to 3.6 m. The low degree of water transparency is due partly to the noticeable brown colour in the water from dissolved peat or humic substances. Chlorophyll a concentrations were moderately low ranging from 0.4 to 4.1 ug/L.

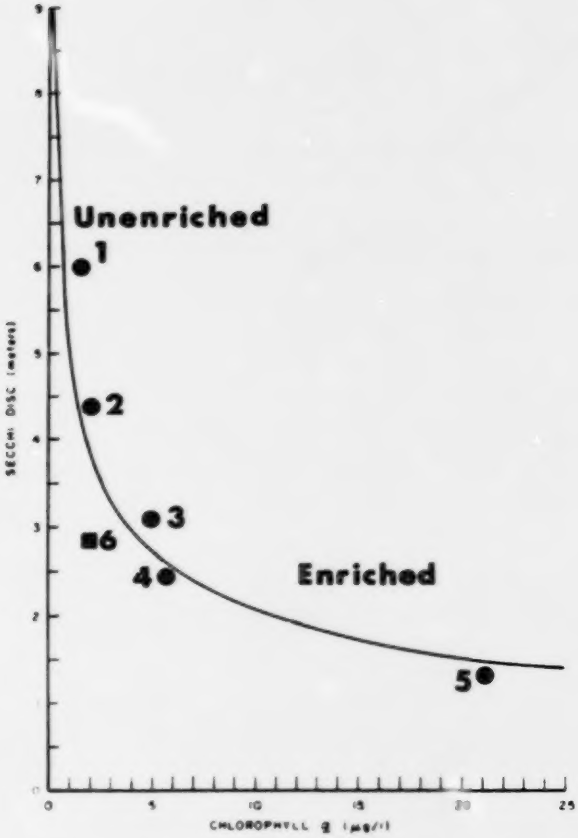
Based on the seasonal averages, Nine Mile Lake would be considered moderately enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Nine Mile Lake from 1979 to 1983

Station	Southeast	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979	- -	- -
1980	2.3	3.7
1981	3.0	2.7
1982	2.8	3.1
1983	2.8	2.1

* Based on less than 6 samples
** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Nine Mile Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Nine Mile Lake - 1983

Since 1980, water quality of Nine Mile Lake has not changed significantly. Average Secchi disc readings have ranged from 2.3 to 3.0 m and average chlorophyll a concentrations have ranged from 2.1 to 3.7 ug/L. This amount of annual variation is typical of moderately enriched lakes which are subject to periodically high densities of suspended algae.

We hope your enthusiastic participation continues in 1984.

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Oak Lake

Belmont & Methuen Twps.

Peterborough

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Oak Lake in 1983

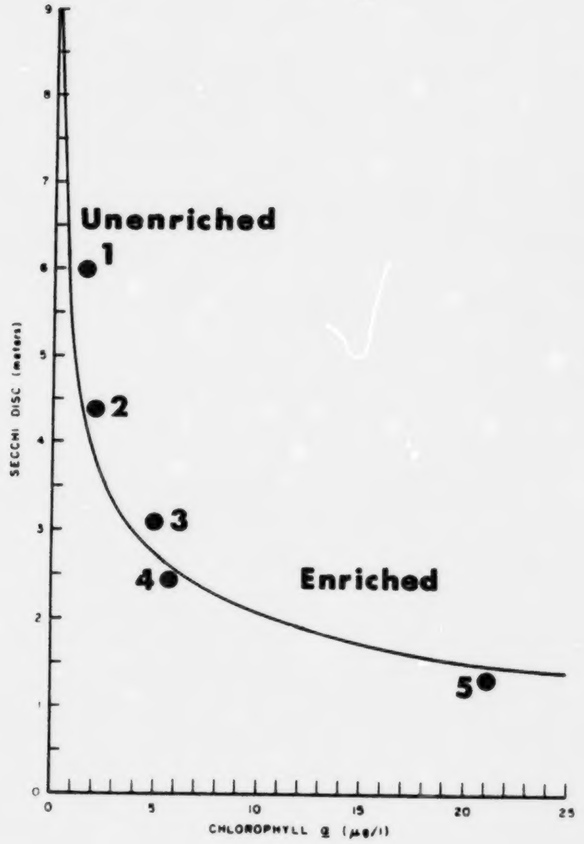
Station	1 North Bay		2 Opposite Sucker Cr.		3 The Narrows		4 Split Rock	
Date	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a	S.D.	Chl.a
July 3	3.0	1.5	4.0	1.2	4.0	1.3	2.5	1.2
Sept.5	3.0	2.3	- -	- -	4.0	2.0	- -	- -

Insufficient samples were collected during 1983 to allow meaningful conclusions to be reached. It is suggested that a station in the open lake be selected and sampled at least six times throughout the ice free period to get reliable seasonal mean values.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Oak Lake in 1983

Station Year
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982

If participation in this program is to be continued the sampling frequency must be increased and sampling should take place at one mid-lake station.

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Percy Lake

Harburn Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Percy Lake in 1983

Station	Main	
Date	S.D.	Chl.a
Aug.15	4.3	3.6
Aug.21	5.5	2.6
Aug.29	4.0	1.8
Sept.04	4.0	1.4
	4.5	2.4

In 1983, Secchi disc readings ranged from 4.0 to 5.5 m and chlorophyll a concentrations ranged from 1.4 to 3.6 ug/L.

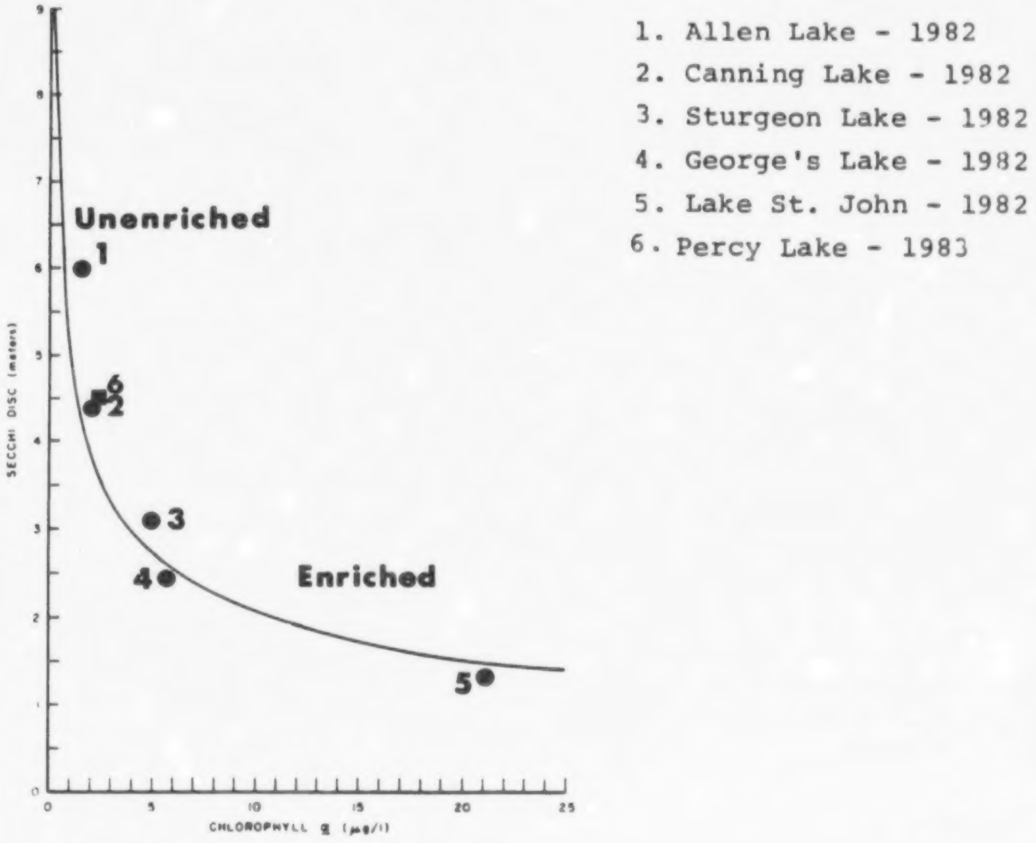
Insufficient sampling was done to obtain a reliable seasonal average, however, based on available information, Percy Lake would be considered moderately enriched. The degree of water transparency was moderately high and densities of suspended algae were moderately low.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Percy Lake from 1977 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977	5.1*	- -
1978	4.1	2.2
1979	4.4	2.1
1980	3.3	3.3
1981	4.1	2.5
1982	3.3	3.1
1983	4.5**	2.4**

* MOE data
** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Percy Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1977, there has been no major change in water quality in Percy Lake.

Average Secchi disc readings have ranged from 3.3 to 5.1 m and average chlorophyll a concentrations have ranged from 2.1 to 3.3 ug/L.

Water quality continues to be very good for recreational use.

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Pine Lake

Muskoka and Wood Wards

Town of Gravenhurst

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Pine Lake in 1983

Station	Upper 1st		Lower 2nd	
Date	S.D.	Chl.a	S.D.	Chl.a
June 19	2.7	2.3	2.8	3.3
July 17	3.25	2.6	3.25	1.5
Aug.1	3.3	4.4	3.4	3.0
Aug.21	3.5	2.2	4.0	2.5
Sept.4	3.2	1.3	3.3	1.3
Oct.10	3.1	3.1	3.3	3.6
	3.2	2.7	3.3	2.5

In 1983, a good sampling program was conducted on Pine Lake. Secchi disc readings ranged from 2.7 to 4.0 m. Chlorophyll a concentrations were moderately low ranging from 1.3 to 4.4 ug/L. There was a noticeable brown colour in the lake resulting from dissolved peat or humic substances from the watershed. This has reduced water transparency somewhat.

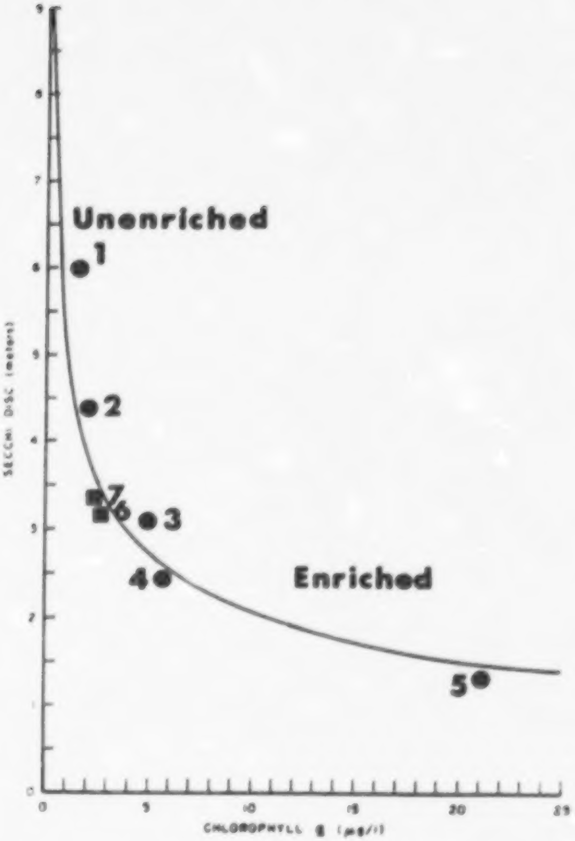
Based on the seasonal averages, Pine Lake would be considered moderately enriched with a moderate degree of water transparency and moderately low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Pine Lake from 1979 to 1983

Station	Upper 1st Lake		Lower 2nd Lake	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973				
1974				
1975				
1976				
1977				
1978				
1979	3.4	2.8	3.4	3.2
1980	2.9	5.1	3.0	4.8
1981	2.9	3.4	3.0	2.9
1982	2.8	3.4	3.3	4.8
1983	3.2	2.7	3.3(4.0*)	2.5 (4.0*)

* MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Pine Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Pine Lake - 1983
   Upper 1st
7. Lower 2nd - 1983

Since 1979, there has been no significant change in the average Secchi disc readings ranging from 2.8 to 3.4 m at both stations. Average chlorophyll a concentrations have fluctuated more, ranging from 2.5 to 5.1 ug/L. This degree of fluctuation is typical of moderately enriched lakes which may experience periodically higher densities of suspended algae.

Water quality of Pine Lake continues to be good for recreational use.

We hope participation in this program continues in 1984.

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Pine Lake

Oakley Ward

Town of Bracebridge

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Pine Lake in 1983

Station	Several		
Date	S.D.	Chl.a	
July 3	5.0	0.9	(South)
July 3	5.0	0.8	(Northwest)
July 4	5.0	0.9	(North)
July 4	5.5	1.0	(East)
July 13	6.0	TX	(Southeast)
July 20	5.0	AD	(Northeast)
July 20	5.5	AD	(Southeast)
Aug.21	6.0	AD	(Centre)
Aug.21	6.5	AD	(South)
Sept.7	4.0	1.1	(Northeast)
Sept.7	4.4	1.0	(Southeast)
	5.3	1.0	

TX sample time expired
AD anomalous data withdrawn

In 1983, there were some problems with chlorophyll analysis during July and August. Extremely high concentrations beyond the range of natural levels were found. The reason for this is not apparent. Secchi disc readings were high ranging from 4.0 to 6.5 m.

Several station locations were sampled all having a similar degree of water transparency.

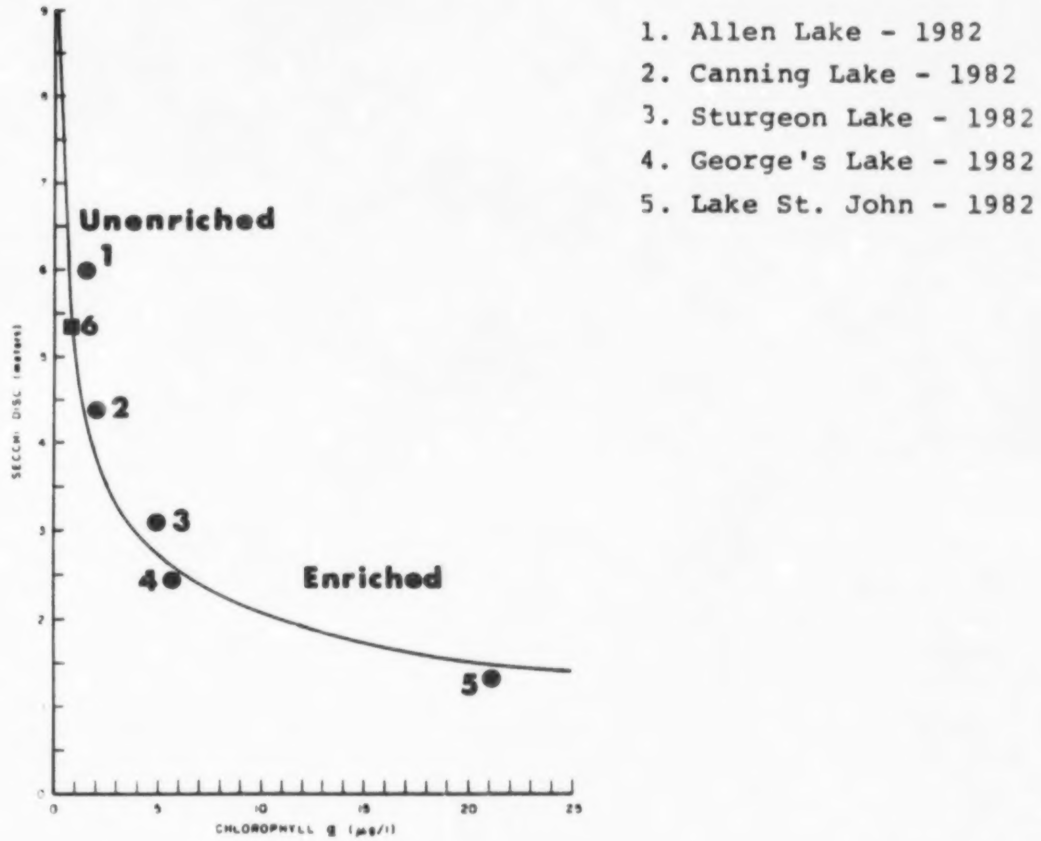
Based on the information available, Pine Lake would be considered unenriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Pine Lake from 1974 to 1983

Station	Several	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974	5.0	1.5
1975	5.7	1.8
1976	- -	- -
1977	5.0	- -
1978	- -	- -
1979	4.4*(4.4**)	2.1*(2.4**)
1980	4.7	3.1
1981	4.5*	2.1*
1982	4.2	1.4
1983	5.3	1.0

* Based on less than 6 samples
** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



Since 1974, there has been no major change in the water quality of Pine Lake. Average Secchi disc readings have ranged from 4.2 m in 1982 to 5.7 m in 1975. Average chlorophyll a concentrations have ranged from 1.0 ug/L in 1983 to 3.1 ug/L in 1980. Water quality continues to be very good for recreational use.

We hope that participation in this program continues in 1984.

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Rebecca Lake

Sinclair Township
Township of Lake of Bays
District Municipality of Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Rebecca Lake in 1983

Station	1 S. of Fair Hope Island		2 Hutchinson's Bay	
Date	S.D.	Chl.a	S.D.	Chl.a
July 3	5.5	NS	5.75	NS
July 10	5.25	1.3	5.25	1.5
July 17	6.5	NS	6.0	NS
Aug.1	5.1	1.7	5.25	1.6
Aug.14	5.5	1.6	5.5	1.1
Aug.21	6.25	1.8	6.0	2.0
	5.7	1.6	5.6	1.6

NS no sample received at lab.

In 1983, a good sampling program was conducted on Rebecca Lake. Water quality was similar at both stations with high Secchi disc readings ranging from 5.1 to 6.5 m. Chlorophyll a concentrations were low ranging from 1.1 to 2.0 ug/L.

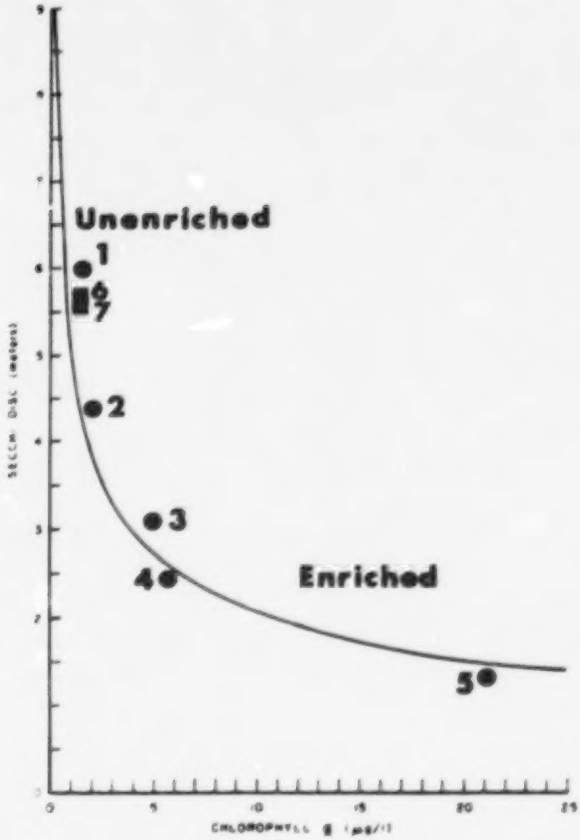
Based on the seasonal averages, Rebecca Lake would be considered unenriched with a high degree of water transparency and low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Rebecca Lake in 1983

Station	1 S. of Fair Hope Island		2 Hutchinson's Bay	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973				
1974				
1975				
1976				
1977				
1978				
1979				
1980				
1981				
1982				
1983	5.7(5.7*)	1.6(2.3*)	5.6	1.6

*MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Rebecca Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Rebecca Lake - 1983
   S. of Fair Hope Island
7. Hutchinson's Bay - 1983

Congratulations on completing your first year as part of the Self-Help program. We hope that you confine to participate so that we can establish a long-term record of water quality.

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Ril Lake

Ridout Ward

Township of Lake of Bays

District Municipality of
Muskoka

TABLE 1: **Secchi Disc (m) and chlorophyll a (ug/L) data collected from** Ril Lake in 1983

Station Date	Centre S.D.	 Chl.a
June 29	3.75	2.4
July 13	3.0	1.9
July 27	3.0	2.8
Aug.17	3.25	2.3
Aug.24	3.25	3.3
Sept.7	2.75	38.8
	3.2	8.6

In 1983, a good sampling program was conducted on Ril Lake. Secchi disc readings ranged from 2.75 to 3.75 m. Chlorophyll a concentrations were moderately low at all times except for Sept.7 when extremely high concentrations were observed. This could either be anomalous data or the result of an algae bloom. If it was an algae bloom it would have produced very green water perhaps forming a scum on the surface. The 1983 MOE survey on Ril Lake did not record an algae bloom, however, no samples were taken close to Sept.7.

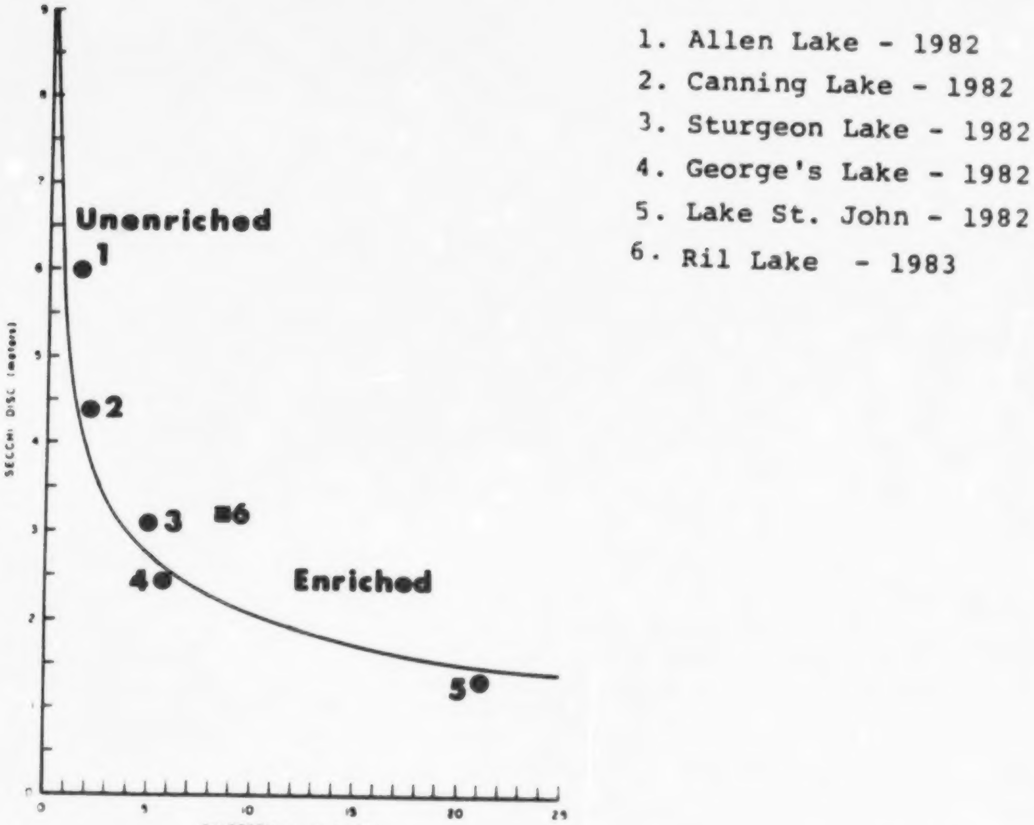
Based on the seasonal averages, Ril Lake would be considered enriched, characterized by a moderate degree of water transparency and high densities of suspended algae.

TABLE 2: **Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from** Ril Lake from 1972 to 1983

Station Year	Main S.D	 Chl.a
1971		
1972	2.5*	4.3*
1973		
1974		
1975		
1976	3.3	3.9
1977	3.0	- -
1978	3.1	3.8
1979	2.5	5.1
1980	2.5	4.5
1981	2.9	5.8
1982	2.7	2.9
1983	3.2(4.0*)	8.6(4.5*)

* MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Ril Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1972, there has been no significant change in the degree of water transparency of Ril Lake, average Secchi disc readings have ranged from 2.5 to 3.3 m.

Average chlorophyll a concentrations have fluctuated more widely ranging from 2.9 to 8.6 ug/L. This can be expected in enriched lakes which experience periodic algae blooms.

We hope participation in this program continues in 1984.

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Round Lake

Belmont Township
Peterborough County

TABLE 1: **Secchi Disc (m) and chlorophyll a (ug/L) data collected from** Round Lake in 1983

Station Date	1 S.E.Corner S.D.	 Chl.a	2 S. Shore S.D.	 Chl.a	3 S. Shore S.D.	 Chl.a	4 S.W. Corner S.D.	 Chl.a
May 23	4.5	1.7	4.0	1.7	4.0	1.6	4.0	1.6
Sept.5	3.0	2.8	3.5	2.9	3.5	3.7	3.5	2.9
Sept.18	--	- -	2.5	10.5	- -	- -	- -	- -
	3.8	4.2	3.3	5.0	3.8	2.6	3.8	2.2

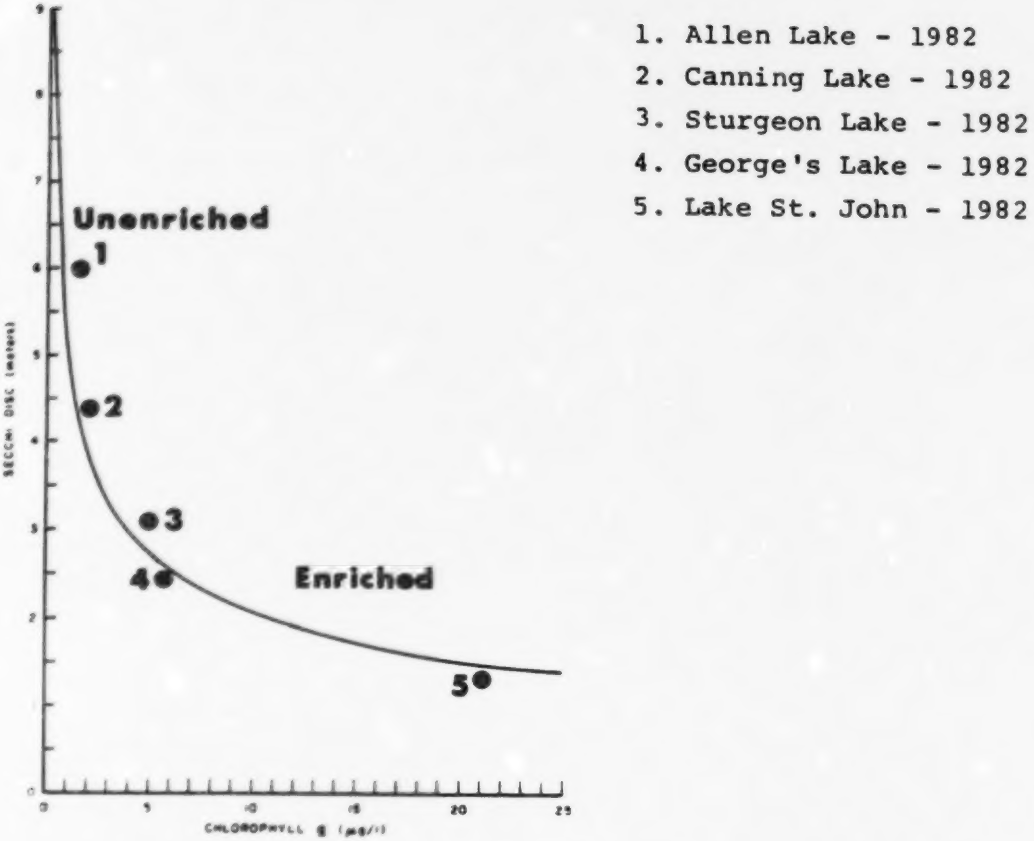
Insufficient samples were collected to allow meaningful conclusions to be reached. It is suggested that a single mid-lake station be sampled at least six times throughout the ice-free period to permit reliable seasonal mean values.

TABLE 2: **Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from** Round Lake from 1977 to 1983

Station Year	Main S.D.	 Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977	2.9	- -
1978	3.3(4.0*)	2.5(2.6*)
1979	3.8	2.8
1980	- -	- -
1981	3.5**	4.8**
1982	3.2**	5.0**

* MOE survey
** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



If participation in this program is to be continued, the sampling frequency must be increased and sampling should take place at one mid-lake station.

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Salerno Lake

Snowdon & Glamorgan Townships
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Salerno Lake in 1983

Station	South		North	
Date	S.D.	Chl.a	S.D.	Chl.a
May 9	4.0	3.3	3.5	LA
May 23	3.0	1.6	3.5	1.4
June 12	5.0	0.9	5.0	1.4
June 26	4.0	1.4	4.0	1.7
July 08	4.5	2.7	4.0	2.8
July 10	5.0	2.3	5.0	1.9
Oct.10	4.0	4.0	3.0	1.8
	4.2	2.3	4.0	1.8

LA - lab accident

In 1983, a good sampling program was conducted on Salerno Lake.

Secchi disc readings ranged from 3 to 5 m at both stations. Chlorophyll a concentrations ranged from 0.9 to 4.0 ug/L at the south end and from 1.4 to 2.8 ug/L at the north end.

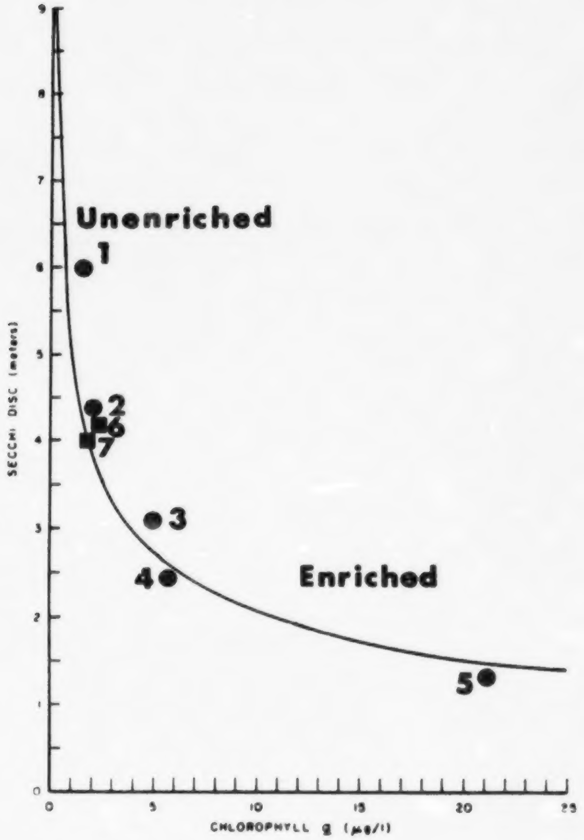
Based on the seasonal averages, Salerno Lake would be considered moderately enriched, characterized by a moderate degree of water transparency and moderately low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Salerno Lake from 1973 to 1983

Station	A South		B North	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973	6.0*	1.9*		
1974	- -	- -		
1975	3.6	4.0	4.5	2.2
1976	3.6	3.0	3.9	2.6
1977	4.1	- -	4.4	- -
1978	4.0**	3.7**	4.3**	3.0**
1979	5.0**	3.7**	5.0**	3.7**
1980	4.2	3.8	4.4	4.8
1981	4.5	4.7	5.2	3.7
1982	3.8	3.6	4.0	4.0
1983	4.2	2.3	4.0	1.8

* Mean of 3 stations
** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Salerno Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Salerno Lake - 1983
   South
7. North - 1983

Since 1975, there have been no major changes in water quality. Average Secchi disc readings have ranged from 3.6 to 5.0 m in the south end and from 3.9 to 5.2 m in the north end. Average chlorophyll a concentrations have ranged from 2.3 to 4.7 ug/L in the south and from 1.8 to 4.8 ug/L in the north.

For a moderately enriched lake such as Salerno Lake, this amount of annual fluctuation is typical.

We hope that your enthusiastic participation in the program continues in 1984.

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Shadow Lake
Somerville Township
Victoria County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Shadow Lake

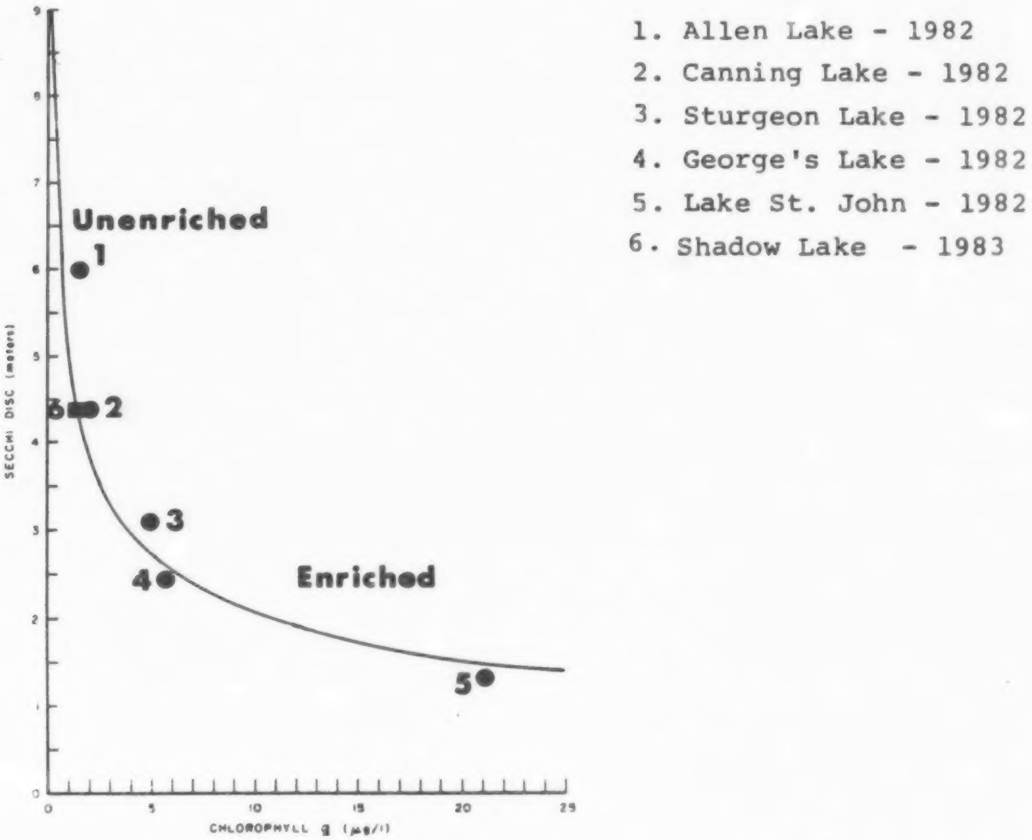
Station	Mid Lake		Bay off Main Lake	
Date	S.D.	Chl.a	S.D.	Chl.a
May 23	- -	- -	3.0	3.2
May 29	3.25	2.5	- -	- -
June 12	3.5	2.5	- -	- -
June 19	4.0	3.2	- -	- -
June 26	- -	- -	3.5	0.8
July 3	3.5	1.2	- -	- -
July 10	4.5	1.1	- -	- -
July 17	5.0	1.1	- -	- -
July 24	5.0	1.3	- -	- -
Aug. 1	4.5	1.2	- -	- -
Aug. 14	5.0	1.5	- -	- -
Aug. 21	5.25	1.1	- -	- -
Aug. 28	5.5	- -	- -	- -
Sept. 5	4.5	1.1	1.0	1.3
	4.4	1.6	2.5	1.8

Another excellent sampling program was carried out during 1983 and Shadow Lake. The mean values for Secchi disc and chlorophyll a concentration indicated that the mid lake was unenriched with low algal density and moderately high degree of water clarity. Unfortunately insufficient samples were collected in the Bay to allow meaningful mean values to be obtained Except for the Sept. 5 Secchi disc value, the values sampled were comparable to the open lake. It is recommended that more frequent sampling take place at this station for an adequate comparison with the open lake.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Shadow Lake from 1972 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972	6.0	1.0
1973	5.0	0.7
1974	5.0	1.0
1975	- -	- -
1976	- -	- -
1977	4.3	- -
1978	4.8	1.8
1979	4.9	2.3
1980	4.8	1.8
1981	4.5	2.2
1982	4.7	1.3
1983	4.8	1.6

Figure 1: The relationship between Secchi disc and chlorophyll a for Shadow Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



The year to year trend indicated in Table 2 suggests that a stable enrichment status for Shadow Lake continues.

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Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Six Mile Lake

Baxter Ward

Town of Georgian Bay

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Six Mile Lake in 1983

Station	North		South	
Date	S.D.	Chl.a	S.D.	Chl.a
June 26	4.0	1.6	3.0	1.5
July 4	5.25	2.0	5.0	2.1
July 10	4.0	0.6	3.0	2.0
Aug.21	NG	1.1	NG	1.1
Aug.28	6.5	1.0	5.5	1.2
Sept.5	5.5	1.1	5.5	1.3
Sept.12	4.5	AD	3.5	1.1
	5.0	1.2	4.3	1.5

NG not given
AD anomalous data withdrawn at lab.

In 1983, a good sampling program was conducted on Six Mile Lake. Secchi disc readings in the north ranged from 4.0 to 6.5 m and in the south from 3.0 to 5.5 m. Chlorophyll a concentrations were low ranging from 0.6 to 2.0 ug/L in the north and from 1.1 to 2.1 ug/L in the south.

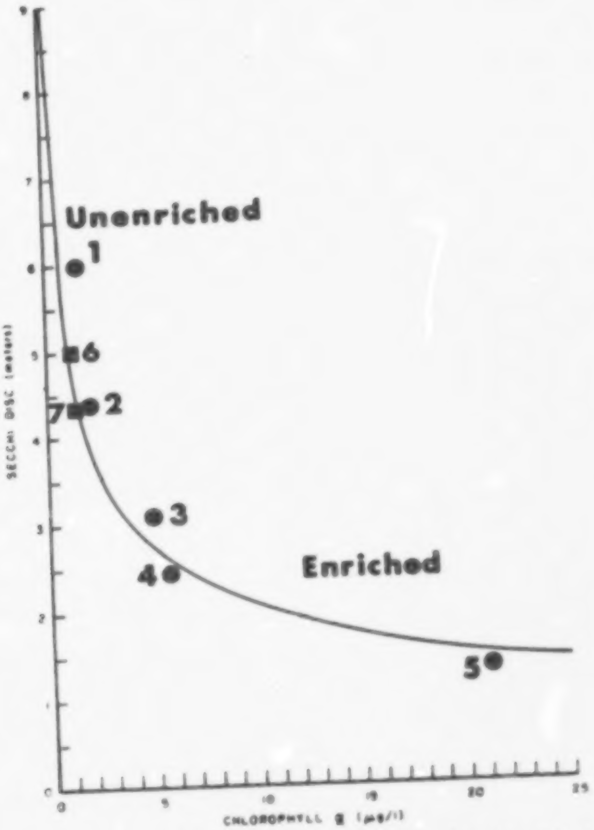
Based on the seasonal averages in 1983, Six Mile Lake exhibited characteristics of an unenriched lake with a high degree of water transparency and low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Six Mile Lake from 1977 to 1983

Station	North (Crooked Bay)		South (Lost Channel)	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973				
1974				
1975				
1976				
1977	4.1	- -	4.1	- -
1978	4.1	2.4	3.8	2.9
1979	5.6	2.2	5.5	2.4
1980	4.4	2.5	3.4	3.7
1981	4.6	2.5	4.1(4.2*)	2.9(2.0*)
1982	3.8**	3.3**	3.5**	3.1**
1983	5.0	1,2	4.3	1.5

* MOE data from main basin
** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Six Mile Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Six Mile Lake - 1983
   North
7. South - 1983

Since 1977, there have been no major changes in the degree of water transparency in Six Mile Lake with average Secchi disc readings ranging from 3.8 to 5.6 m in north and from 3.4 to 5.5 m in the south.

Average chlorophyll a concentrations have been moderately low except in 1983 when concentrations were the lowest observed for the period of record.

We hope your enthusiastic participation continues in 1984.

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Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Skeleton Lake

Cardwell, Stisted, Stephenson
and Watt Wards

Twp. of Muskoka Lakes

District Municipality of
Muskoka.

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Skeleton Lake in 1983

Station Date	Middle North Shore S.D.	 Chl.a
June 5	8.5	0.6
June 17	9.0	0.5
July 11	9.5	0.6
July 26	11.0	0.4
Aug. 6	11.0	1.5
Aug. 21	11.0	0.6
Aug. 30	10.0	AD
Sept.5	12.0	AD
	10.2	0.7

AD - anomalous data withdrawn

Once again an excellent sampling program was conducted on Skeleton Lake in 1983.

Secchi disc readings were very high ranging from 8.5 to 12.0 m. Chlorophyll a concentrations ranged from 0.4 to 1.5 ug/L.

We apologize for Aug. 30 and Sept.5 when the lab had problems with the chlorophyll samples and results were withdrawn.

Based on the seasonal averages, Skeleton Lake was unenriched, characterized by an extremely high degree of water transparency and low densities of suspended algae.

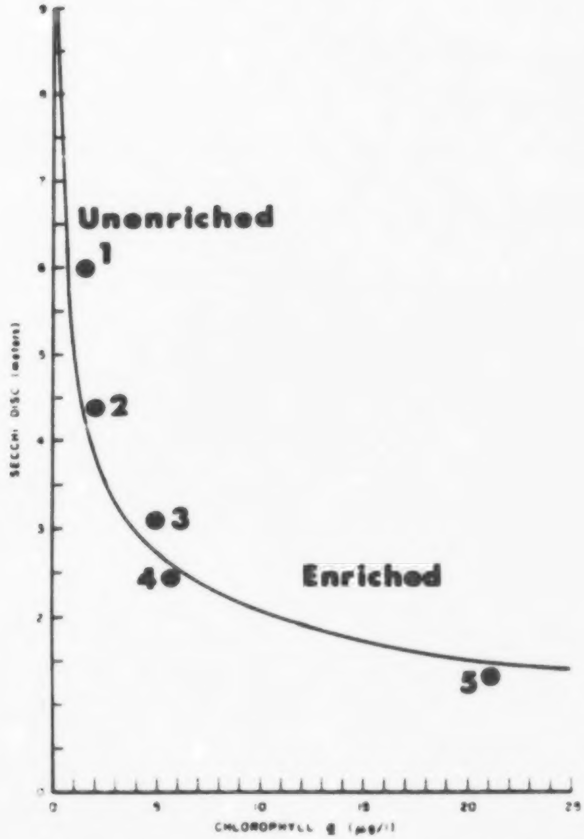
TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Skeleton Lake from 1980 to 1983

Station Year	Middle (North Shore) S.D.	 Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979		
1980	9.5**	1.1**
1981	10.3**(8.0*)	1.2**(0.8*)
1982	9.8	1.0
1983	10.2	0.7

* MOE data at main basin

** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Skeleton Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Skeleton Lake - 1983

Since 1980, there have been no changes in water quality in Skeleton Lake.

Average Secchi disc readings were very high and average chlorophyll a concentrations were low.

Water quality continues to be excellent for recreational use with Skeleton Lake being the clearest lake in Central Region.

We hope your enthusiastic participation continues in 1984.

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Soyers Lake

Minden Township
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Soyers Lake in 1983

Station	1	
Date	S.D.	Chl.a
May 23	3.45	2.8
July 3	4.8	1.9
July 10	4.8	1.5
July 17	4.4	1.8
Aug. 1	3.8	2.4
Aug. 14	4.2	2.2
Aug. 21	5.2	1.1
Sept. 5	5.2	1.8
	4.5	1.9

An excellent sampling program was conducted on Soyers Lake in 1983.

Secchi disc readings ranged from 3.45 to 5.2 m and chlorophyll a concentrations ranged from 1.1 to 2.8 ug/L.

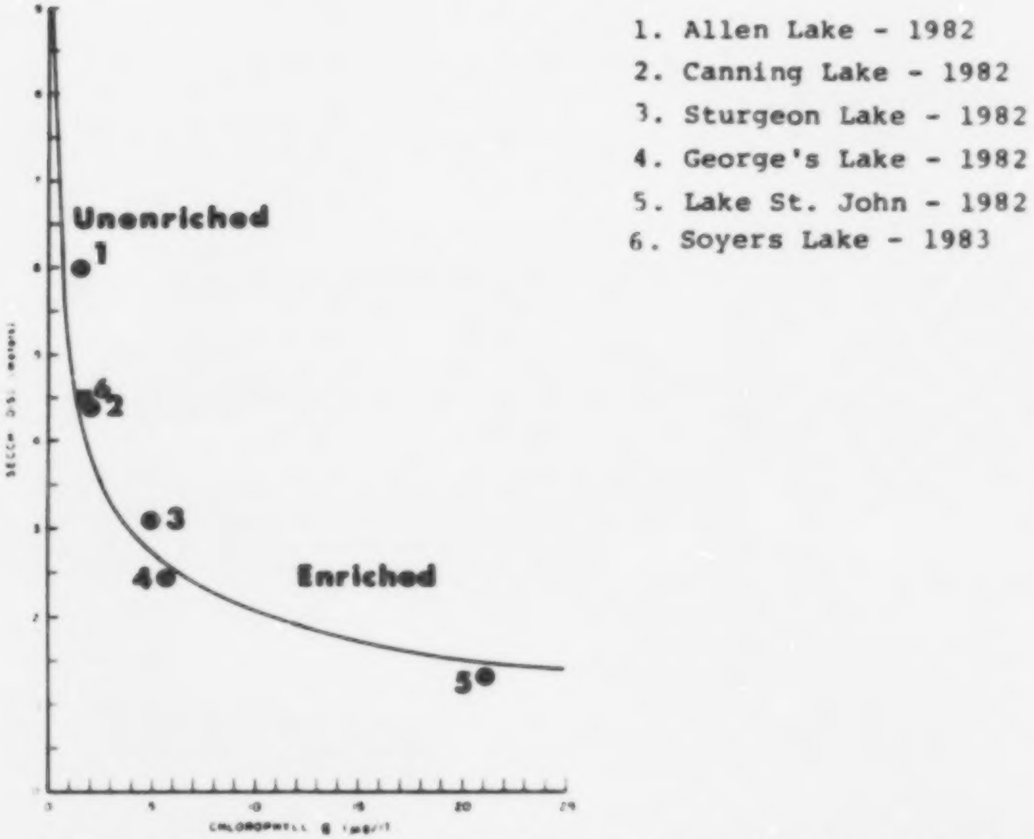
Based on the seasonal averages, Soyers Lake would be considered borderline between unenriched and moderately enriched, characterized by a moderately high degree of water transparency and low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Soyers Lake from 1973 to 1983

Station	1	
Year	S.D.	Chl.a
1971		
1972		
1973	3.8	1.7
1974	4.4*	0.9*
1975	3.5	2.1
1976	4.3	1.7
1977	5.0	- -
1978	5.2	1.8*
1979	4.5	2.2
1980	4.1	2.6
1981	4.7	2.1
1982	4.2	2.4
1983	4.5	1.9

* Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Soyers Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Since 1973, we have an excellent record of water quality in Soyers Lake. There has been no major change in water quality with average Secchi disc readings ranging from 3.5 to 5.2 m. Average chlorophyll a concentrations have been low ranging from 0.9 to 2.6 ug/L.

We hope that your enthusiastic participation in this program continues in 1984.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Sparrow Lake

Morrison Ward

Town of Gravenhurst

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Sparrow Lake in 1983

Station Date	North End S.D.	Chl.a	Deep Bay S.D.	Chl.a
June 19	2.75	3.5	4.3	1.2
June 26	1.5	2.7	2.5	1.8
July 3	2.3	1.9	3.0	1.1
July 17	3.3	1.1	4.0	1.1
July 24	2.8	1.8	4.7	1.9
Aug.1	2.8	1.7	4.5	1.5
Aug.13	2.4	2.2	4.9	1.5
Aug.20	3.0	1.3	4.0	0.6
Aug.25	3.1	1.2	4.8	AD
Sept.4	3.6	0.8	5.2	LA
	2.8	1.8	4.2	1.3

AD anomalous data withdrawn at lab.

LA lab accident

In 1983, an excellent sampling program was conducted on Sparrow Lake. At the north end, Secchi disc readings were low ranging from 1.5 to 3.6 m, however, chlorophyll a concentrations were also low ranging from 0.8 to 3.5 ug/L. The low degree of water transparency must have been determined by factors other than suspended algae. In Deep Bay, Secchi disc readings were moderately high ranging from 2.5 to 5.2 m and chlorophyll a concentrations were low ranging from 0.6 to 1.9 ug/L.

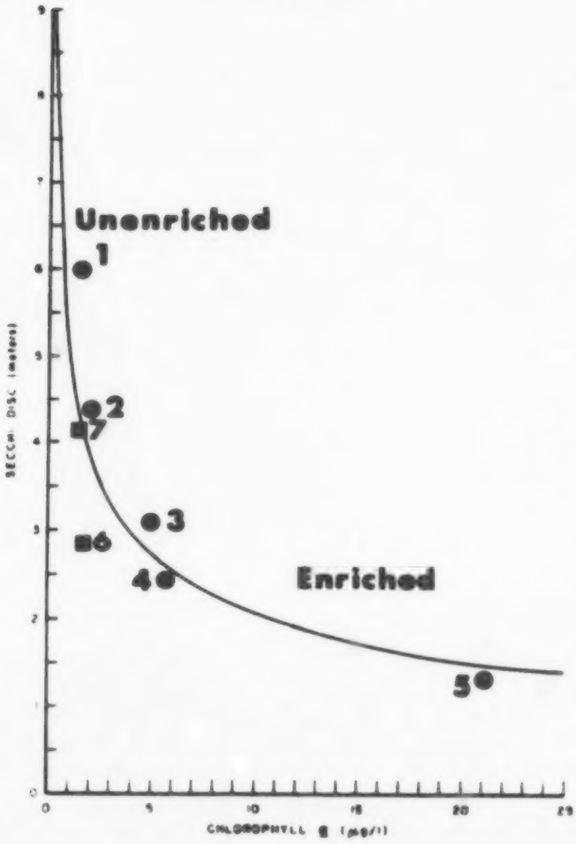
Based on the seasonal averages, Sparrow Lake would be considered moderately enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Sparrow Lake from 1981 to 1983

Station Year	North End S.D.	Chl.a	Deep Bay S.D.	Chl.a
1971				
1972				
1973				
1974				
1975				
1976				
1977				
1978				
1979				
1980				
1981			**3.3***	**3.0***
1982			**4.1**	**2.1**
1983	**2.8**	**1.8**	**4.2**	**1.3**

*** MOE data from main basin.**

Figure 1: The relationship between Secchi disc and chlorophyll a for Sparrow Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Sparrow Lake - 1983
   North End
7. Deep Bay - 1983

In Deep Bay, water quality was similar in 1982 and 1983.

We hope that participation in this program continues with sampling done consistantly at one or two selected stations so that a long-term record of water quality can be established.

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Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Sturgeon Lake

Fenelon Township
Victoria County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Sturgeon Lake in 1983

Station	Off Sturgeon Pt. Foot 2nd St.		Hawkers Bay	
Date	S.D.	Chl.a	S.D.	Chl.a
June 5	4.0	1.6	- -	- -
June 10	3.7	- -	- -	- -
June 22	5.5	0.9	- -	- -
June 27	4.5	1.2	- -	- -
July 02	3.0	3.1	- -	- -
July 10	3.0	4.1	2.0	6.1
July 17	2.7	6.3	2.5	2.4
July 26	3.0	2.3	2.0	3.1
July 30	1.7	4.0	- -	- -
Aug. 7	3.0	3.6	2.0	4.4
Aug. 13	2.0	10.4	2.0	1.4
Aug. 14	- -	- -	2.0	13.2
Aug. 22	2.25	9.2	2.0	10.4
Aug. 30	2.25	- -	- -	- -
Sept.7	2.25	7.0	- -	- -
Sept.10	1.25	5.2	- -	- -
Sept.20	1.3	21.6	- -	- -
Sept.24	1.3	21.6	- -	- -
Oct. 1	2.0	9.6	- -	- -
Oct. 12	2.5	8.7	- -	- -
	2.7	7.1	2.1	5.8

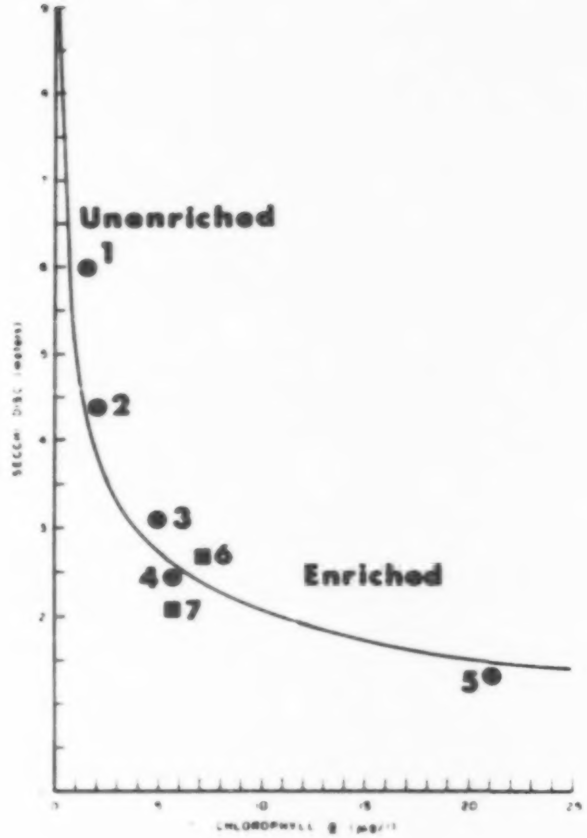
An excellent sampling program was carried out during 1983 on Sturgeon Lake. The seasonal trend indicated that relatively low algal density and moderate water clarity continued to the beginning of August. From this time into fall conditions worstened, probably due to blue-green algae blooms that typically occur in late summer and early fall in Sturgeon Lake. The Severity of the blooms appeared less than in other years. For the comparable period Hawkers Bay did not appear to be significantly different than the Sturgeon Point Station.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Sturgeon Lake from 1976 to 1983

Station Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972*				
1973				
1974				
1975				
1976*	2.3	8.3		
1977				
1978*	2.2	8.2		
1979				
1980				
1981				
1982	3.1	5.1		
1983	2.7	7.1	2.1	5.8

* MOE data from same approximate location.

Figure 1: The relationship between Secchi disc and chlorophyll a for Sturgeon Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Sturgeon Lake - 1983

   Off Sturgeon Pt.
   Foot 2nd St.

7. Hawkers Bay - 1983

Continued participation in the sampling program is encouraged to determine long-term trends.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Sunny Lake

Morrison Ward
Town of Gravenhurst
District Municipality of Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Sunny Lake in 1983

Station	Gordon's Cottage		North Bay	
Date	S.D.	Chl.a	S.D.	Chl.a*
July 3	4.0	0.9	3.75	1.0
July 10	4.5	3.4	3.5	2.6
July 17	5.0	2.5	3.5	3.0
July 24	4.25	2.4	3.5	1.6
Aug. 7	6.25	3.2	3.5	1.5
Aug. 20	5.5	4.1	3.5	1.5
Sept.5	4.75	1.6	3.5	1.2
Oct. 10	4.0	1.8	3.5	1.2
	4.8	2.5	G3.5	1.7

G - greater than, Secchi disc on bottom

* Chlorophyll samples not taken through a depth of twice Secchi depth due to shallowness of station.

In 1983, an excellent sampling program was conducted on Sunny Lake.

Secchi disc reading at Gordons Cottage ranged from 4.0 to 6.25 m and chlorophyll a concentrations ranged from 0.9 to 4.1 ug/L. The highest densities of suspended algae corresponded to the highest Secchi disc readings indicating that the algae were concentrated below the Secchi depth. In North Bay, accurate Secchi disc readings could not be obtained due to shallowness. Chlorophyll a concentrations were low ranging from 1.0 to 3.0 ug/L.

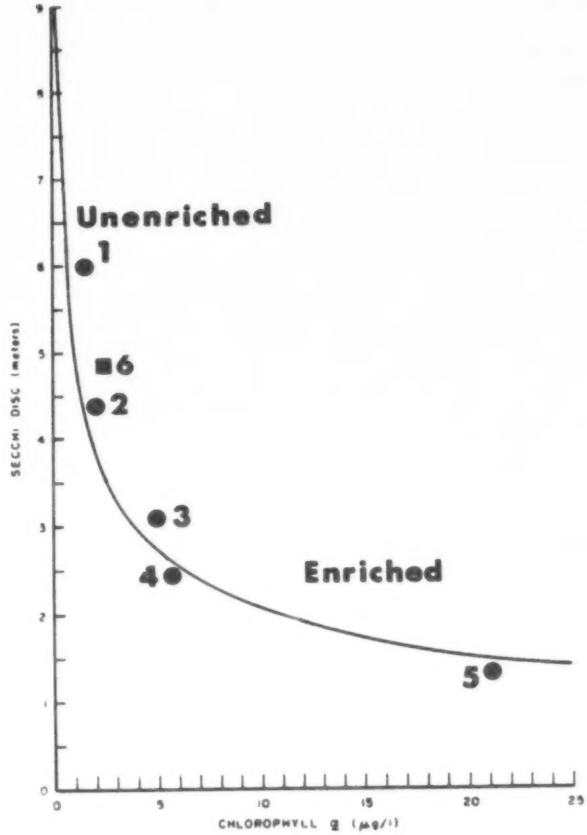
Based on seasonal averages Sunny Lake would be considered moderately enriched with lower densities of suspended algae in North Bay.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Sunny Lake from 1982 to 1983

Station	Gordon's		North Bay	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972	4.2*	4.6*		
1973				
1974				
1975				
1976				
1977				
1978				
1979			G 3.8	3.1
1980			G 3.2	5.1
1981			- -	- -
1982	4.25**	3.4**	G 3.75**	1.8**
1983	4.8	2.5	G 3.5	1.7

* MOE data at main basin
** Based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for Sunny Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Sunny Lake - 1983
   Gordon's Cottage

Since 1979, average chlorophyll a concentrations in North Bay have fluctuated widely from 1.7 to 5.1 ug/L. It appears to be subject to periodic algae blooms which is not unusual in moderately enriched lakes, particularly in a shallow bay such as North Bay of Sunny Lake.

Water quality continues to be good for recreational use.

We hope that your enthusiastic participation in the program continues in 1984.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Tasso Lake

Finlayson Ward
Twp. of Lake of Bays
District Municipality of Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Tasso Lake in 1983

Station	2nd Bay	
Date	S.D.	Chl.a
June 26	6.0	1.0
July 17	5.0	0.9
Aug. 1	6.5	1.0
Aug. 14	5.0	1.5
Aug. 28	6.5	2.0
Sept. 5	5.5	2.2
	5.8	1.4

In 1983, a good sampling program was conducted on Tasso Lake.

Secchi disc readings were high ranging from 5.0 to 6.5 m and chlorophyll a concentrations were low ranging from 0.9 to 2.2 ug/L.

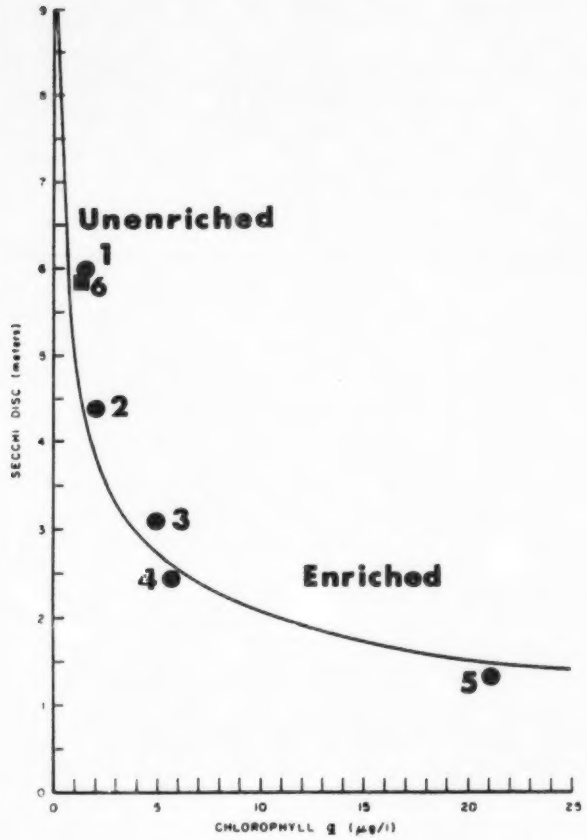
Based on the seasonal averages, Tasso Lake would be considered unenriched with a high degree of water transparency and low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Tasso Lake from 1980 to 1983

Station	2nd Bay South	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979		
1980	6.4*	2.8*
1981	7.3*(5.2*)	1.6*(2.0*)
1982	5.5*	2.2*
1983	5.8	1.4

* Based on less than 6 samples
** MOE data on main basin

Figure 1: The relationship between Secchi disc and chlorophyll a for Tasso Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Tasso Lake - 1983

Since 1980, average Secchi disc readings have ranged from 5.5 to 7.3 m and average chlorophyll a concentrations have ranged from 1.4 to 2.8 ug/L.

There have been no significant changes in water quality for the period of record. Water quality continues to be excellent for recreational use.

We hope that your participation in this program continues in 1984.

For additional copies of this report, please contact:

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Turtle Lake
Burleigh Twp.
Peterborough County

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Turtle Lake in 1983

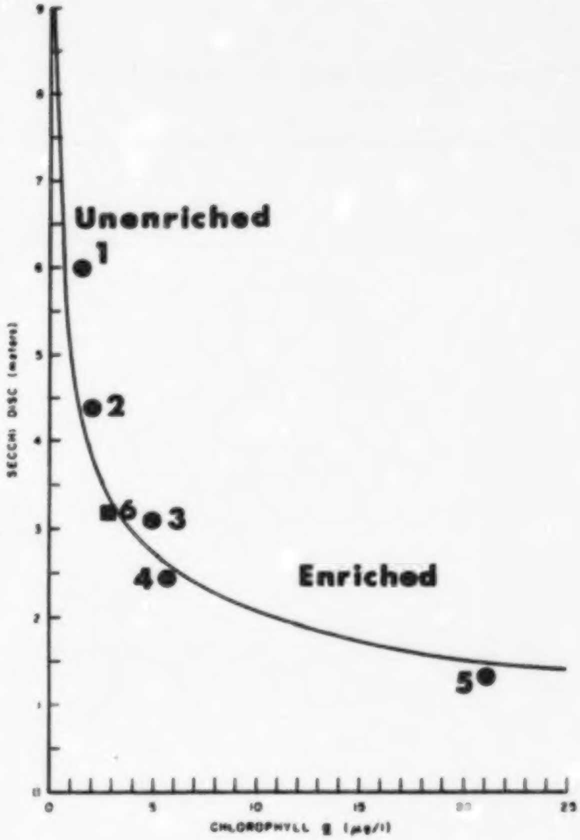
Station Date	Main Basin S.D.	 Chl.a
June 30	3.25	2.2
July 15	4.0	1.6
Aug. 31	3.5	2.1
Sept.28	3.2	3.5
Oct. 24	2.0	3.5
Nov. 25	3.0	4.6
	3.2	2.9

Based on the mean values for Secchi disc and chlorophyll a concentration Turtle Lake was considered moderately enriched with moderate algal densities and moderate water clarity.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Turtle Lake in 1983

Station Year	Main Basin S.D.	 Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979		
1980		
1981		
1982		
1983	3.2	2.9

Figure 1: The relationship between Secchi disc and chlorophyll a for Turtle Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Turtle Lake - 1983

Continued participation in the sampling program is recommended to determine long-term trends in enrichment status.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Turtle (Long Turtle) Lake

Muskoka Ward
Town of Gravenhurst

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Turtle Lake in 1983

Station	1	
Date	S.D.	Chl.a*
July 3	3.0	3.3
July 10	3.0	2.6
July 24	2.75	1.5
Aug. 7	2.25	2.4
Aug. 21	2.3	2.0
Sept. 4	3.0	1.8
	2.7	2.3

*Chlorophyll samples not taken to twice Secchi depth due to shallowness of station.

In 1983, a good samping program was conducted on Turtle Lake.

Secchi disc readings were low, ranging from 2.25 to 3.0 m. The degree of water transparency was reduced due to the natural brown colour in the water as the result of dissolved peat or humic substances from the watershed. Chlorophyll a concentrations were moderately low, ranging from 1.5 to 3.3 ug/L.

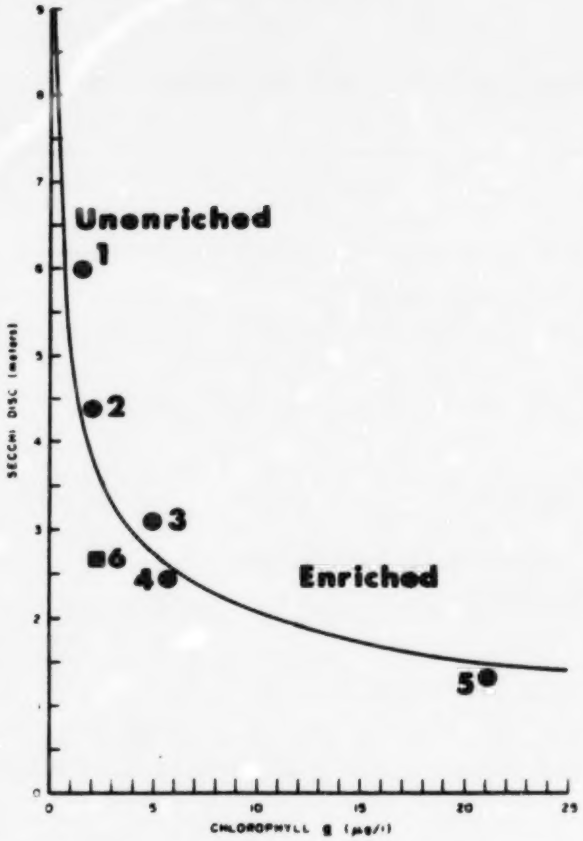
Based on the seasonal averages,Turtle Lake would be considered moderately enriched with a low degree of water transparency and moderately low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Turtle Lake in 1983

Station	1	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979		
1980		
1981		
1982		
1983	2.7(3.7*)	2.3(3.8*)

* MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Turtle Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Turtle Lake - 1983

Congratulations on successfully completing your first year as part of the Self-Help Program.

Water quality of Turtle Lake is good for recreational use.

We hope your enthusiastic participation continues so that we can establish a long-term record of water quality for Turtle Lake.

For additional copies of this report, please contact:

Ontario Ministry of the Environment, Central Region, 150 Ferrand Drive, DON MILLS, Ontario, M3C 3C3, Telephone: (416) 424-3000, Attention: Dhan Sharma

Twelve Mile Bay

Freemen Ward

Twp. of Georgian Bay

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Twelve Mile Bay in 1983

Station	Middle	
Date	S.D.	Chl.a
June 10	3.3	2.5
June 20	3.0	3.2
July 6	3.5	1.8
Aug. 8	3.5	2.6
	3.3	2.5

In 1983, Secchi disc readings ranged from 3.0 to 3.5 m and chlorophyll a concnetrations ranged from 1.8 to 3.2 ug/L.

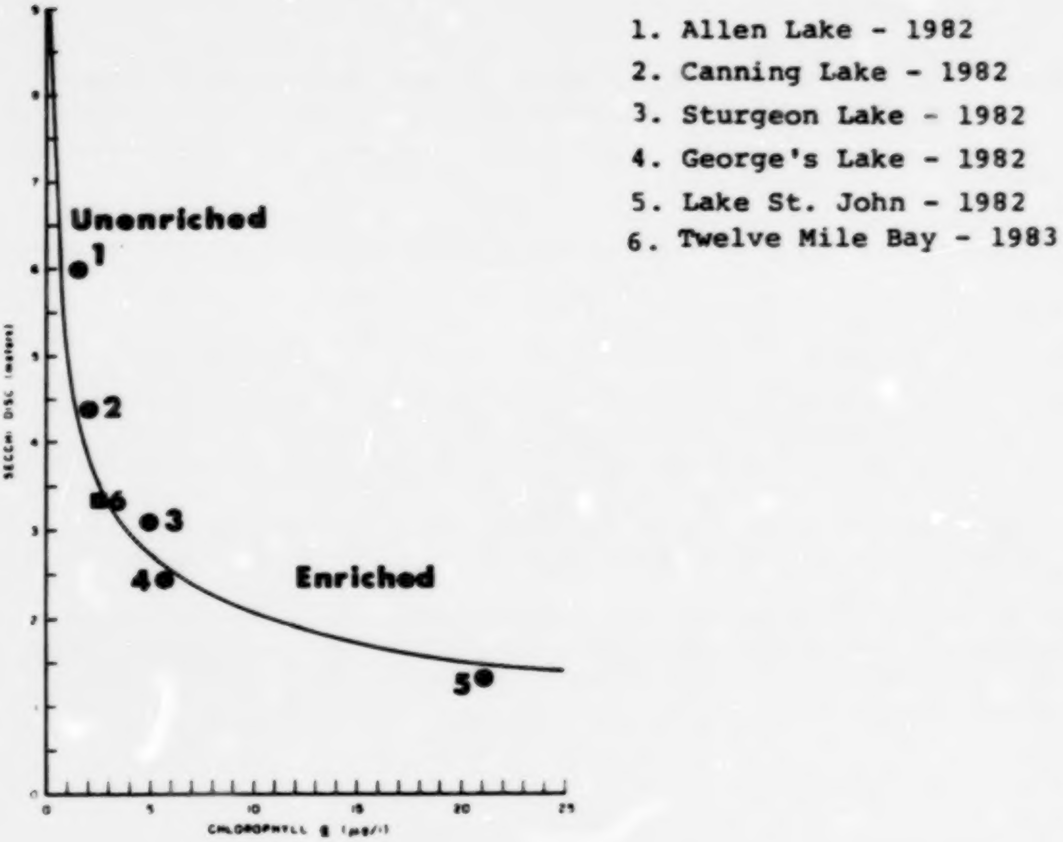
Based on the information available, Twelve Mile Bay would be considered moderately enriched, characterized by a moderately low degree of water transparency and moderately low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Twelve Mile Bay in 1983

Station	Middle	
Year	S.D.	Chl.a
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979		
1980		
1981		
1982		
1983	3.3*	2.5*

* based on less than 6 samples.

Figure 1: The relationship between Secchi disc and chlorophyll a for Twelve Mile Bay in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Water quality in Twelve Mile Bay is good for recreational use.

We hope that your participation in this program continues so that we can establish a long-term record of water quality for Twelve Mile Bay.

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Twelve Mile Lake
Minden Twp.
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll *a* (ug/L) data collected from Twelve Mile Lake in 1983

Station	Main	
Date	S.D.	Chl.*a*
May 23	3.0	2.0
June 26	4.0	1.2
July 3	5.0	1.8
July 10	6.0	0.7
July 17	5.5	0.7
July 24	5.5	1.6
Aug. 1	5.0	1.4
Aug. 14	4.5	2.6
Aug. 20	5.0	1.0
Aug. 28	6.0	LA
Sept. 5	5.0	0.9
	5.0	1.4

In 1983, an excellent sampling program was conducted on Twelve Mile Lake.

Secchi disc. readings were moderatley high, ranging from 3.0 to 6.0 m. Chlorophyll *a* concentrations were low, ranging from 0.7 to 2.6 ug/L.

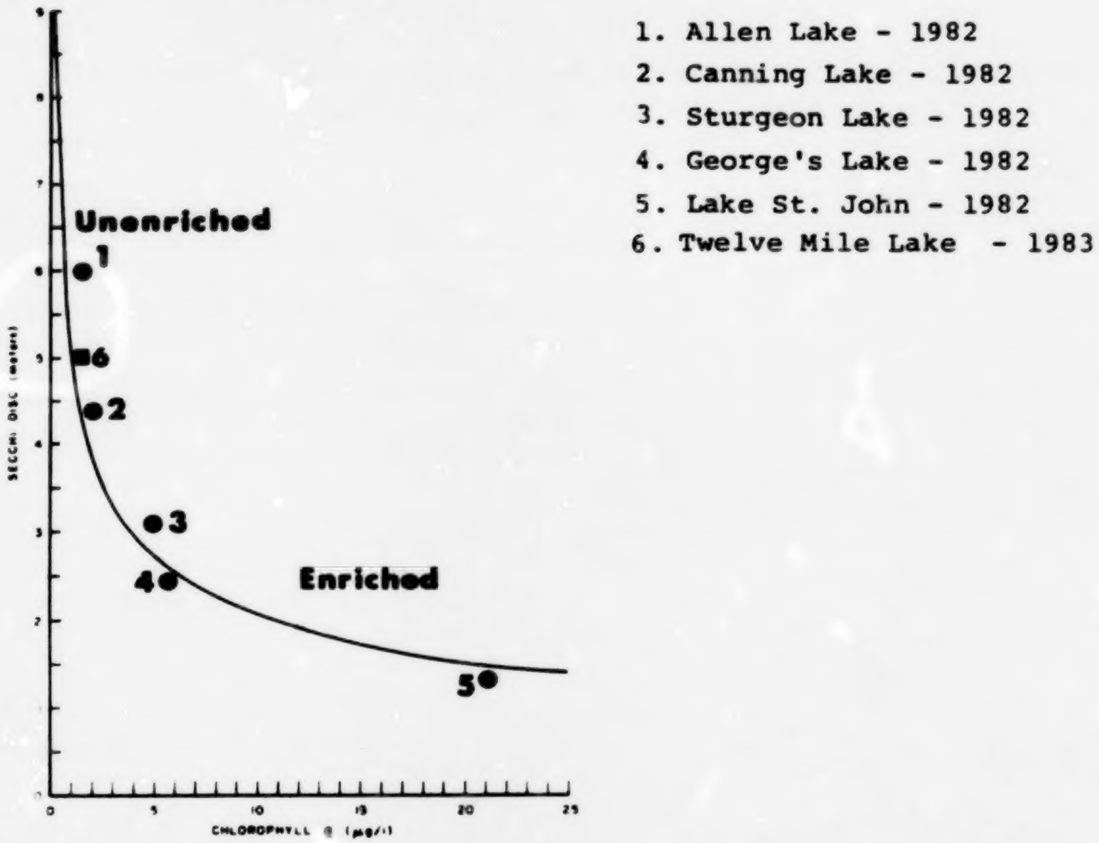
Based on the seasonal averages, Twelve Mile Lake would be considered unenriched with a high degree of transparency and low densities of suspended algae.

LA - lab accident

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll *a* (ug/L) data collected from Twelve Mile Lake from 1972 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972	5.8	1.2
1973	6.3	1.8
1974	6.0	1.0
1975	6.9	2.5
1976	6.5	1.7
1977	6.5	- -
1978	- -	- -
1979	- -	- -
1980	5.0	2.2
1981	5.5	3.1
1982	4.9	2.1
1983	5.0	1.4

Figure 1: The relationship between Secchi disc and chlorophyll a for Twelve Mile Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



Twelve Mile Lake has been sampled since 1972 so we have an excellent long-term water quality record.

Average Secchi disc readings have been high, ranging from 4.9 to 6.9 m. Average chlorophyll a concentrations have ranged from 1.0 to 3.1 ug/L.

Water quality of Twelve Mile Lake continues to be very good for recreational use.

We hope that your enthusiastic participation in this program continues in 1984.

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Waseosa Lake

Chaffey Ward
Town of Huntsville
District Municipality of
Muskoka

TABLE 1: Seecchi Disc (m) and chlorophyll a (ug/L) data collected from Waseosa Lake in 1983

Station	North End	
Date	S.D.	Chl.a
June 12	2.8	3.1
July 4	3.0	1.7
July 19	3.5	2.6
Aug.9	4.5	3.6
Aug.29	4.2	4.0
Sept.11	4.75	2.4
	3.8	2.8

In 1983, a good sampling program was conducted on Waseosa Lake.

Secchi disc readings were moderately low, ranging from 2.8 to 4.75 m. Chlorophyll a concentrations were moderately low, ranging from 1.7 to 4.0 ug/L.

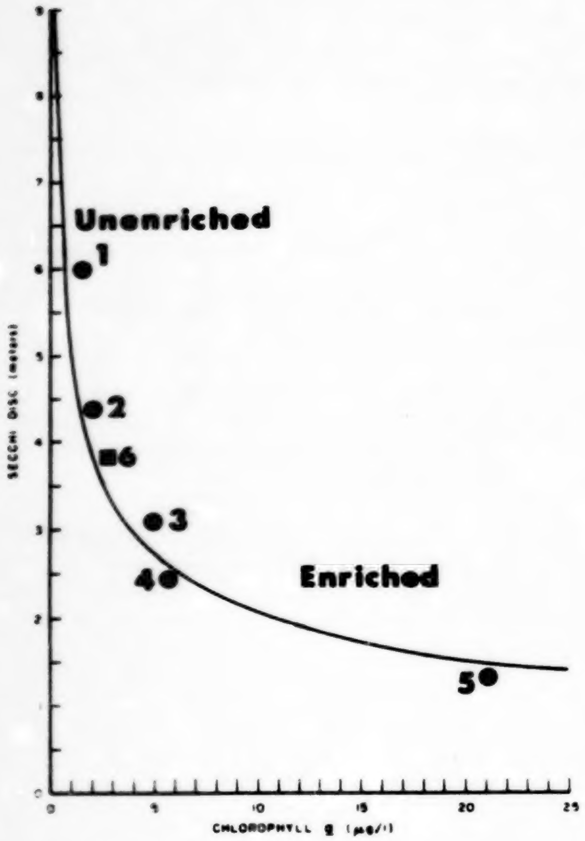
Based on the seasonal averages Waseosa Lake would be considered moderately enriched, characterized by a moderate degree of water transparency and moderate densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Waseosa Lake from 1971 to 1983

Station	Main	
Year	S.D.	Chl.a
1971		
1972	3.1**	5.7**
1973		
1974	4.2	2.8
1975	4.1(4.3**)	5.2(3.5**)
1976	- -	- -
1977	5.1	- -
1978	4.8*	2.8*
1979	3.8*	4.4*
1980	3.7	2.6
1981	3.8*	3.4*
1982	3.8*	3.0*
1983	3.8	2.8

* Based on less than 6 samples
** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Waseosa Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Waseosa Lake - 1983

Since 1972, there has been no major change in water quality in Waseosa Lake. Water quality is good for recreational use.

Average Secchi disc readings have ranged from 3.1 to 5.1 m and average chlorophyll a concentrations have ranged from 2.6 to 5.7 ug/L. This degree of annual fluctuation is typical of moderately enriched lakes which are subject to periodically high densities of suspended algae.

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Wenona (Little Dudmon) Lake

Dudley Twp.
County of Haliburton

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Wenona Lake in 1983

Station	North		South	
Date	S.D.	Chl.a	S.D.	Chl.a
May 29	7.1	AD	8.0	0.7
July 3	4.25?	1.9	4.5?	1.9
Aug. 7	4.0	2.3	4.0	1.7
	5.1	2.1	5.5	1.4

? chlorophyll sample depth only was given,
Secchi depth assumed to be ½
AD - anomalous data.

In 1983, insufficient sampling was done to obtain reliable seasonal averages, therefore, we are unable to make conclusions regarding water quality in 1983.

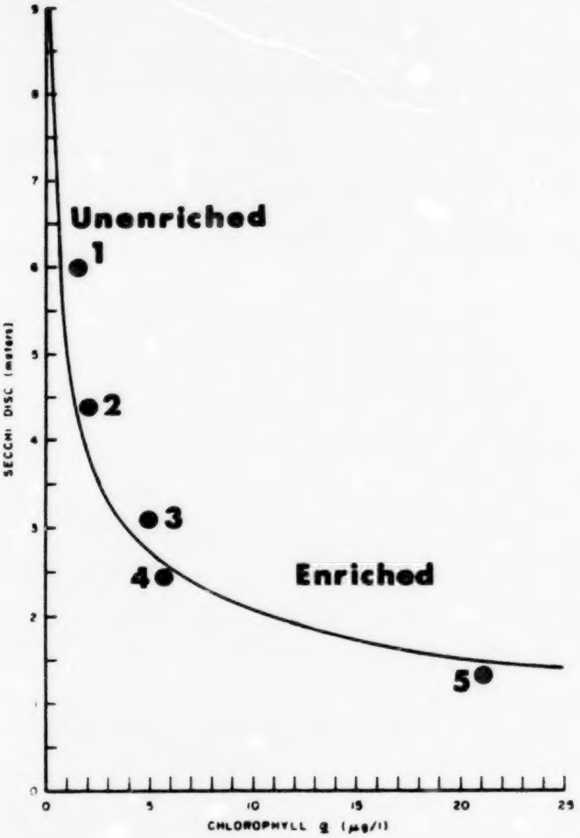
The information available indicated a wide range of water transparency and low densities of suspended algae.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Wenona Lake from 1977 to 1983

Station	North		South	
Year	S.D.	Chl.a	S.D.	Chl.a
1971				
1972				
1973				
1974				
1975				
1976				
1977	5.8*	3.5*		
1978	- -	- -		
1979	5.0	3.6		
1980	4.8	2.9		
1981	6.0	2.2		
1982	- -	- -		
1983	5.1**	2.1**	5.5**	1.4**

* MOE data
** based on less than 6 samples

Figure 1: The relationship between Secchi disc and chlorophyll a for and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982

We hope that your participation in this program continues in 1984 with an increase in sampling frequency, if possible.

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Wood Lake

Oakley Ward

Town of Bracebridge

District Municipality of
Muskoka

TABLE 1: Secchi Disc (m) and chlorophyll a (ug/L) data collected from Wood Lake in 1983

Station	Mid Lake-Oak Island	
Date	S.D.	Chl.a
July 17	3.6	1.1
July 24	3.0	0.8
Aug.7	4.7	1.2
Aug.14	4.2	2.0
Aug.21	4.7	1.4
Aug.27	4.4	1.6
Sept.4	NG	AD
	4.1	1.4

AD - anomalous data withdrawn at lab.
NG - not given

In 1983, a good sampling program was conducted on Wood Lake.

Secchi disc readings were moderately high, ranging from 3.0 to 4.7 m. Chlorophyll a concentrations were low ranging from 0.8 to 2.0 ug/L.

There is a noticeable brown colour in the water resulting from dissolved peat or humic substances. This has reduced water transparency.

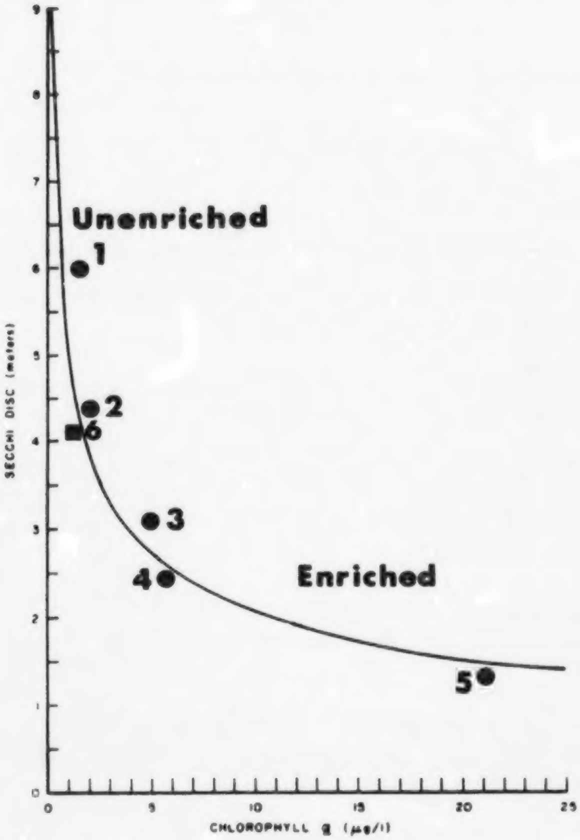
Based on the 1983 seasonal averages, Wood Lake would be considered unenriched, however, previous information (Table 2) indicates that it is actually moderately enriched.

TABLE 2: Summary of mean values for Secchi disc (m) and chlorophyll a (ug/L) data collected from Wood Lake from 1972, 1974-1975, and 1978 to 1983.

Station	Centre	
Year	S.D.	Chl.a
1971		
1972	3.5**	5.1**
1973	- -	- -
1974	4.5	1.3
1975	4.7	2.9
1976	- -	- -
1977	- -	- -
1978	2.8*	3.0*
1979	4.3	3.6
1980	3.4	3.7
1981	3.5*	1.7*
1982	3.6	2.0
1983	4.1(4.8**)	1.4(2.1**)

* Based on less than 6 samples
** MOE data

Figure 1: The relationship between Secchi disc and chlorophyll a for Wood Lake in 1983 and a number of recreational lakes in the province. All data are seasonal means.



1. Allen Lake - 1982
2. Canning Lake - 1982
3. Sturgeon Lake - 1982
4. George's Lake - 1982
5. Lake St. John - 1982
6. Wood Lake - 1983

Since 1972, the degree of water transparency in Wood Lake has not changed significantly ranging from 2.8 to 4.7 m. Average chlorophyll a concentrations have fluctuated more, ranging from 1.3 to 5.1 ug/L because of periodically high densities of suspended algae. This phenomenon is typical for moderately enriched lakes.

We hope that participation in this program continues in 1984.

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